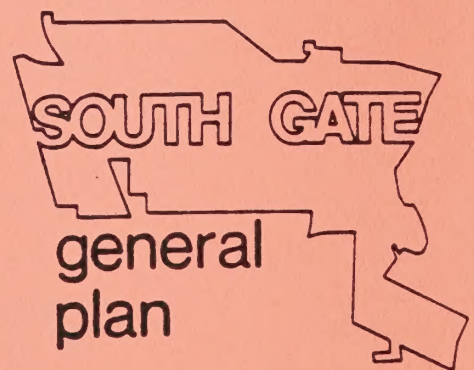


Background Report

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BACKGROUND REPORT
CITY OF SOUTH GATE
GENERAL PLAN

APRIL, 1986

COTTON/BELAND/ASSOCIATES, INC.
1028 North Lake Avenue, Suite 107
Pasadena, California 91104

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Introduction

I. INTRODUCTION

A. Purpose of Report

The City Council authorized the update of the South Gate General Plan to bring it into conformance with state law and to provide a firm basis for future development decisions. This Background Report has been prepared in order to provide a data base for the update of the General Plan. Information has been collected and analyzed on the following issues:

- ° demographics and housing
- ° land use
- ° circulation
- ° public facilities and infrastructure
- ° public safety
- ° economic characteristics

The discussion of these issues is detailed and, whenever possible, presented graphically. This analysis identifies opportunities, problems, and trends which will provide a basis for the setting of goals and objectives and to establish the rationale behind General Plan policy direction.

B. Summary

Demographics. An analysis of demographic data for the City of South Gate identified several emerging population and housing trends:

- Population growth rates are accelerating compared to past growth rates. The Department of Finance population estimates indicate the City has experienced an 11 percent increase in population between 1980 and 1984.
- The race and ethnicity of the City's population has also undergone a significant change since 1970. In 1970, approximately 17 percent of the City's population was Hispanic; ten years later this figure had grown to 58 percent.
- There has been a significant increase in the number of families with small children and the average household size has increased from 2.5 persons in 1970 to 3.2 persons in 1984. This indicates a trend towards overcrowding in the City.
- A substantial number of residents live in low-income households and their geographic distribution coincides with those areas that have experienced the greatest increases in population and the greatest change in ethnic composition.
- The significant increase in population has had a considerable impact on the City's housing. Overcrowding has become a significant problem resulting in an increased demand for available housing.

- There has not been a significant change in housing tenure between 1970 and 1980. In 1970, approximately 47 percent of the City's housing was owner-occupied. Ten years later, the owner-occupied households accounted for approximately 49 percent of the City's housing stock.

Land Use. A survey of existing land use and an analysis of previous land use reports provided by the City indicate the following:

- Residential land uses occupy 1920 acres or approximately 40 percent of the City's land area. This figure is unchanged from a previous land use study that was conducted in 1972.
- While the residential acreage has remained unchanged, the density of residential land uses has undergone significant change. The number of single-family and duplex units declined between 1970 and 1980. During this same period, 1609 multiple-family units were added to the City's housing stock.
- Commercial acreage has increased by 58 acres (24 percent) since 1972 while industrial land use has decreased by 19 acres (2 percent) during the same period.
- The City's zoning is inconsistent with the goals set forth in the existing general plan. A major problem concerns the area zoned for greater residential densities. Approximately 68 percent of the City's acreage zoned for residential land uses is zoned for multi-family densities.

Circulation. The findings of our traffic analysis included the following:

- Three major streets, Long Beach Boulevard, Firestone Boulevard, and Imperial Highway, exceed their design level of service for their entire length within the City of South Gate. In addition, the portion of Tweedy Boulevard located in the downtown, is operating above its design capacity. Other heavily travelled sections of roadways in South Gate are also currently handling traffic loads that exceed their design capacity.
- **Any** introduction of the larger "inter-state" trucks will have major **impacts** on the existing circulation in the City. These include an **exacerbation** of the existing problems of congestion, noise, air **quality** and accelerated deterioration of the road surfaces.

Public Facilities and Infrastructure. The majority of the existing infrastructure was designed for low densities and is not presently equipped to deal with the increased demands from a larger population.

- The Water Department indicates water consumption in South Gate is equivalent to that of a City of 85,000 to 95,000 persons and the demands on the existing system will be expected to increase in coming years.

- The majority of the water and sewer lines are over 50 years old and may need upgrading or replacement to meet the demands of a larger population. The southwestern portion of the City is deficient in water storage and emergency reserve capacity.
- South Gate is deficient in park space by approximately 24 acres with the western portion of the City inadequately served by the existing parks.
- The school facilities located in South Gate are experiencing severe overcrowding as a result of the recent increases in birth rates and immigration that have taken place in the City, as well as the large number of undocumented aliens.

Public Safety. South Gate maintains a high level of police and fire services. The City maintains its own police department and fire protection is provided through a contractual agreement with Los Angeles County.

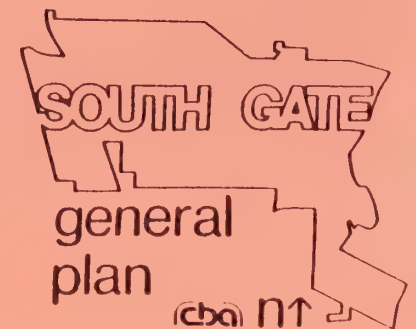
- The South Gate Police Department has an active crime prevention program that has been successful in reducing some types of crime in the City. In addition, the police department is active in other programs designed to increase police and community interaction.
- No major seismic faults are known or suspected to traverse the City, though significant damage may result in the event of a major earthquake generated by faults in the surrounding region.
- The Federal Emergency Management Agency indicates the absence of serious flooding threat from nearby rivers.

Economic Characteristics. The City's economic base will change considerably with new developments proposed in the City.

- Several major employers have closed their facilities in South Gate. In addition, the number of small and medium-sized business may be expected to increase.
- In 1980, approximately 21 percent of those businesses located in South Gate were involved in some form of manufacturing, 32 percent in retail trade, 8 percent in wholesale trade, and 38 percent were service-oriented activities.
- In a survey conducted by Natelson-Levander-Whitney, fourteen sites were identified as being suitable for conversion to more intensive uses.



FIGURE 1
Vicinity Map



Demographics

II. DEMOGRAPHICS

A. Population Characteristics

The population of South Gate as of January 1, 1984 was estimated by the Department of Finance to be 74,200 persons. The current population represents an increase of 20,369 or 37.8 percent since 1960. The City has not been involved in any significant annexations of residential areas since 1960; thus, the significant increase in population may be attributed to natural increase and immigration into the City. The population of South Gate for 1960, 1970, 1980 and 1984 is shown in Table 1.

TABLE 1: SOUTHGATE POPULATION, 1960-1984

Year	Population	% Increase
1960	53,831	N/A
1970	56,909	5.7
1980	66,784	17.4
1984*	74,200	11.1

Source: U.S. Census (1960, 1970, 1980)

Department of Finance, State of California

South Gate differs from most older California cities in that the City's population growth rate seems to be accelerating when compared to the previous two decades. Since 1980, the City's population has increased an estimated 7,400 persons which represents an average of 1,850 new residents annually. This figure is much higher than the average annual population growth of 308 persons per year between 1960 and 1970 and 741 persons per year between 1970 and 1980.

The Department of Finance population estimates for each year beginning with 1970 through 1980 are shown in Table 2. During the first half of the decade, the City was actually thought to have lost population, though this trend was reversed in 1974. Since that time, the City has experienced a net annual increase in population with annual growth rates averaging 2.6 percent during the period between 1974 and 1980. Population growth in South Gate is even more dramatic in the first half of this decade. From 1980 to 1984, the City's population grew by 7,416 persons which represents an annual average growth rate of approximately 2.8 percent.

* Estimate, Department of Finance, State of California

TABLE 2: ANNUAL POPULATION CHANGE FOR SOUTH GATE: 1970-1980

Year	Population	Annual Change	
		No.	%
1970	56,909	-	-
1971	56,900	-9	0.0
1972	56,700	-200	-.4
1973	56,300	-400	-.7
1974	56,400	100	.2
1975	58,000	1,600	2.8
1976	59,100	1,100	1.9
1977	59,600	500	.8
1978	60,900	1,300	2.2
1979	63,500	2,600	4.2
1980	66,784	3,284	

Source: Department of Finance, 1984

Table 3 examines the growth rates of the individual census tracts within South Gate between 1970 and 1980. The greatest rates of growth were experienced in the southwest quadrant of the City (refer to Figure 2). Tract number 5358 was divided for enumeration purposes in the 1980 census into separate tracts (5358.01 and 5358.02). The most significant growth in absolute terms and growth rates occurred within these two tracts.

TABLE 3: POPULATION GROWTH WITHIN SOUTH GATE BY CENSUS TRACT

Census Tract	1970	1980	Percent Change
5355	6127	7128	16.3
5356.01	7767	9434	21.5
5356.02	4371	5595	28.0
5357	7432	7762	4.4
5358.01*		6748	
	8135		
5358.02		4497	38.2
5359	7703	8219	6.7
5360	2185	2804	28.3
5361	7759	9032	16.4
5362	5430	4975	- 8.4
TOTAL	56,909	66,784	17.3

Source: U.S. Census (1970, 1980)

Note: Census Tracts are shown on Figure 2. "p" denotes census tracts which are only partially in South Gate.

* Tract no. 5358 was divided into 5358.01 and 5358.02 in the 1980 Census.

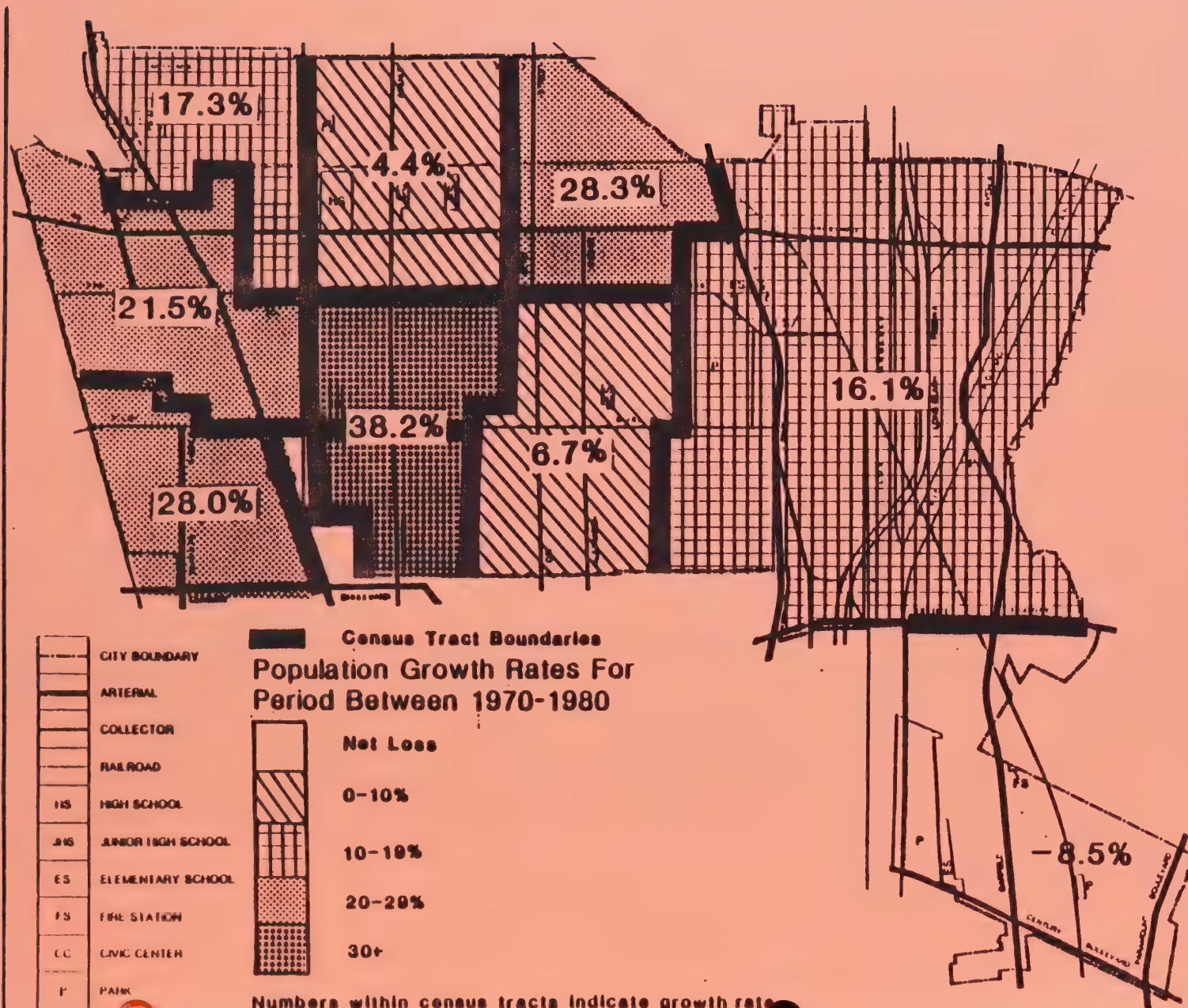
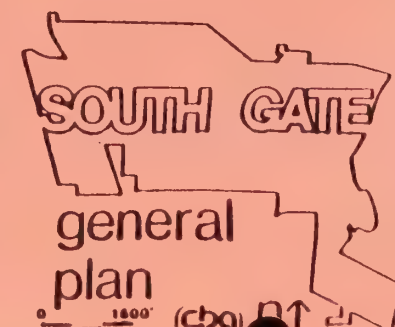


Figure 3

Population Growth
1970 to 1980



The population growth rates of the cities surrounding South Gate were comparable to those of the City during the decade between 1970 and 1980. Population data from the 1970 and 1980 census for the region surrounding South Gate is provided in Table 4. The similar growth rates suggest that South Gate is included in a regional demographic trend.

TABLE 4: POPULATION TRENDS IN THE SOUTH GATE REGION

Jurisdiction	1970	1980	Population Change	
			No.	%
South Gate	56,909	66,784	9,875	(17.4)
Bell Gardens	22,098	25,450	3,352	(15.2)
Cudahy	16,998	18,275	1,277	(7.5)
Downey	88,445	82,602	-5,843	(-6.6)
Huntington Park	33,744	45,932	12,188	(36.1)
Lynwood	43,353	48,548	5,195	(12.0)
Los Angeles	2,816,061	2,966,850	150,789	(5.4)
Paramount	34,734	36,407	1,673	(4.8)
Los Angeles Co.	7,032,075	7,477,503	445,428	(6.3)

Source: 1970 U.S. Census
1980 U.S. Census
SCAG-82 Regional Growth Forecast

The race and ethnicity of South Gate residents has also undergone significant change in the 10 year period between 1970 and 1980. The number of Hispanics in the City increased nearly 300% during that 10 year period. In 1970, Hispanics comprised approximately 17.3 percent of the population. In 1980, the Hispanics comprised approximately 58.4 percent of the City's population. Other minorities have grown in the decade between 1970 and 1980, though their total numbers, relative to the City as a whole, are under 4 percent. Table 5 provides a comparison of the racial/ethnic groups residing in South Gate in 1970 and 1980. Los Angeles County statistics are provided for comparison of the growth in Hispanic population.

TABLE 5: SOUTH GATE RACE AND ETHNICITY

Race/Ethnicity	1970	(%)	1980	(%)
American Indian	-	-	441	(0.7)
Asian	-	-	955	(1.4)
Black	40	Negl.	1,248	(1.7)
White	55,913	(98.2)	53,376	(79.9)
Other	956	(1.8)	10,764	(16.1)
TOTAL	56,909	100.0	66,784	(99.8)
Hispanic	9,839	(17.3)	38,969	(58.5)
L.A. County Hispanic	1,289,311	(18.3)	2,065,503	(27.6)

Source: U.S. Census

Note: Persons of Hispanic origins are also included in several racial groups.

In examining the racial and ethnic characteristics of South Gate at the census tract level, the distribution of the various groups residing in the City becomes more apparent. Seven of the ten census tracts in the City have Hispanic populations that comprise more than 50 percent of the total tract population. The distribution of persons of Spanish origin is clearly illustrated in Figure 4 which provides the percentage of Hispanics residing in each of the City's ten census tracts. Those tracts located in the western edge of the City have the highest percentage of Hispanic residents with the percentage of Hispanics residing in each census tract decreasing in an eastward trend. The tracts located on the eastern edge of the City have the lowest percentage of Hispanic residents. Table 6 provides a detailed comparison of the racial and ethnic characteristics of each of the City's ten census tracts, and Figure 4 graphically displays the information.

A major limitation in the census statistics for South Gate is the failure of the data to provide information regarding the undocumented aliens residing in the City. In a memorandum to the City dated April 28th, 1980, The Levander Company, Inc. estimated the number of the undocumented aliens residing in the City based on a review of the age distribution, household, household size, and school enrollment for the Hispanic and non-Hispanic sectors of the population. The study concluded that South Gate's population may have been underestimated by as much as 18 percent. If this is the case, South Gate's population of undocumented aliens may be as high as 13,000 persons which should give the City a population of approximately 87,000 persons in 1985.

Another demographic characteristic that has undergone significant change since 1970 is the age distribution of the City's population. The proportion of pre-school and school-aged children grew significantly while the proportion of residents between 55 and 64 years of age declined in the decade between 1970 and 1980. In 1970, approximately 29 percent of the population was under 20 years of age. In 1980, this same age group accounted for nearly 36 percent or over one-third of the city's population. This trend appears to be continuing. In part, it is a result of a turn-over of the older, white households to younger and larger Hispanic families. The impacts of the ongoing demographic shift within the City includes the overcrowding of schools, recreational facilities, and housing.

Table 7 provides the age characteristic of the City's population for 1970 and 1980. In addition to the actual number of persons in each age group, the proportion of the particular age group to the total City's population is also provided.

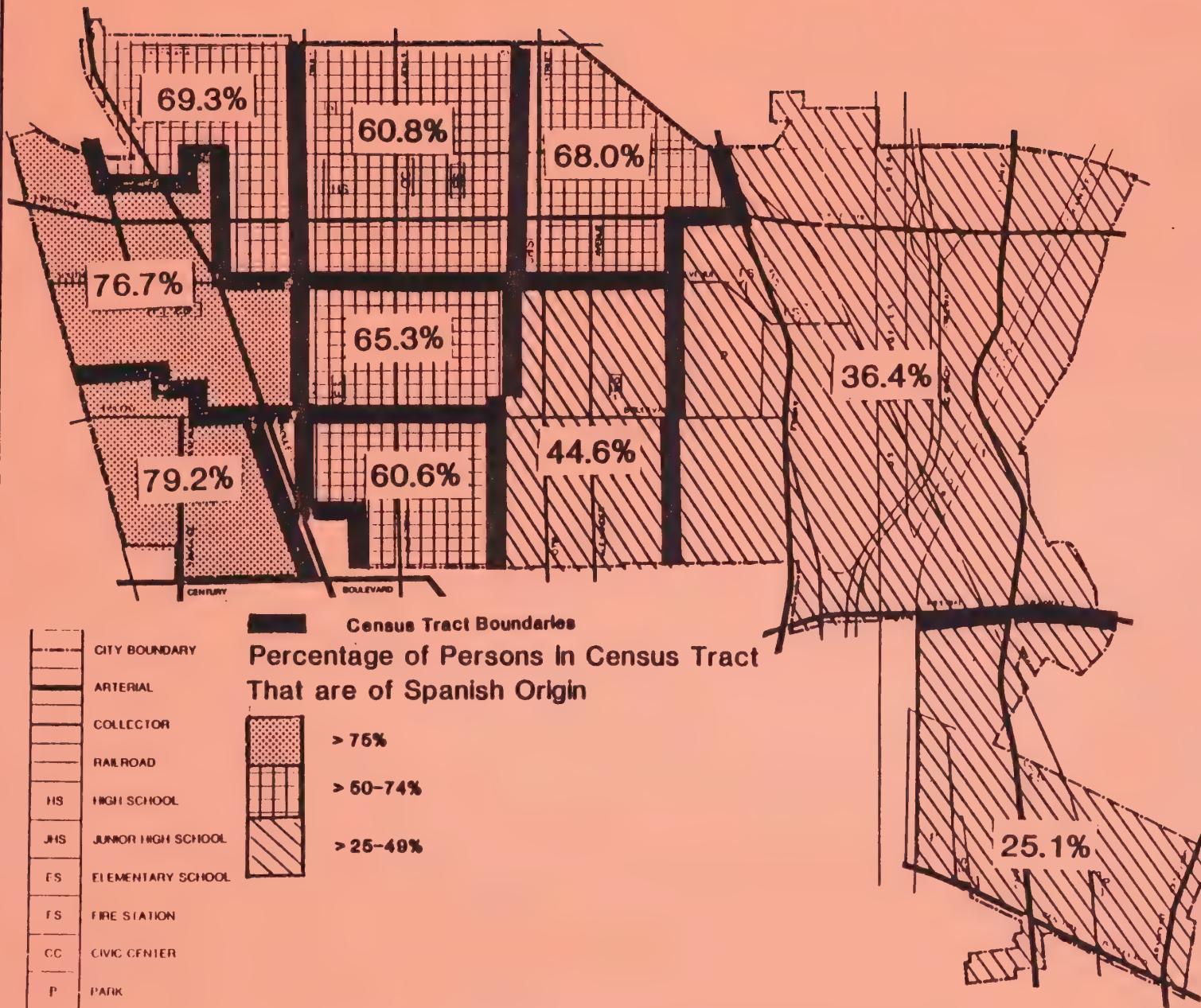


Figure 4
 Distribution of
 Persons of
 Spanish Origin

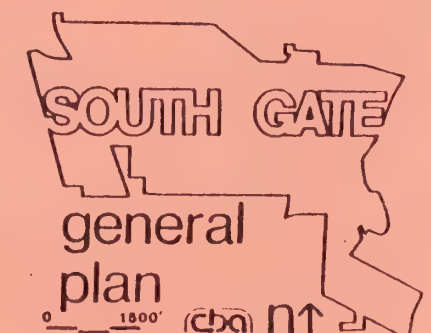


TABLE 6: RACE AND ETHNICITY IN SOUTH GATE BY CENSUS TRACT

Census Tract	White		Black		Asian & Amerind		Other		Total	Spanish Origin	
	No.	%	No.	%	No.	%	No.	%		No.	%
5355	5,995	77.8	64	0.8	186	2.4	1,473	19.1	7,718	5,351	69.3
5356.01	7,316	77.5	184	2.0	180	1.9	1,754	18.6	9,434	7,232	76.7
5356.02	4,345	77.7	139	2.5	66	1.2	1,045	18.8	5,595	4,431	79.2
5357	5,691	73.3	25	0.3	175	2.3	1,871	24.1	7,762	4,716	60.8
5358.01	5,508	81.6	110	1.6	145	2.1	985	14.6	6,748	4,404	65.3
5358.02	3,731	83.1	54	1.2	67	1.5	645	14.3	4,497	2,724	60.6
5359	6,908	84.0	44	0.5	189	2.3	1,078	13.1	8,219	3,664	44.6
5360	2,209	78.8	7	0.2	17	0.6	571	20.4	2,804	1,906	68.0
5361	7,165	79.3	600	6.6	277	3.1	990	11.0	9,032	3,290	36.4
5362	4,508	90.6	21	0.4	94	1.9	352	7.1	4,975	1,251	25.1
TOTAL	53,376	79.9	1,248	1.9	1,396	2.0	1,764	16.1	66,784	38,969	58.4

Source: 1980 U.S. Census

TABLE 7: AGE CHARACTERISTICS OF THE POPULATION 1970 - 1980

Age Range	1970		1980		Change
0 - 4 (Preschool)	4,940	(8.7%)	7,108	(10.6%)	+ 43.9
5 - 19 (School)	11,564	(20.3)	16,789	(25.1)	+ 45.2
20 - 24 (College)	4,814	(8.5)	6,305	(9.4)	+ 31.0
25 - 54 (Working)	20,703	(36.4)	23,485	(35.2)	+ 13.4
55 - 59 (Early Retirement)	4,259	(7.5)	2,952	(4.4)	- 30.7
60 - 64 (Retirement)	3,603	(6.3)	2,964	(4.4)	- 18.0
65+ (Senior Citizens)	7,026	(12.3)	7,181	(10.8)	+ 2.2

Source: U.S. Census (1970, 1980)

B. Household Characteristics

South Gate's estimated 74,200 persons made up approximately 22,920 households in 1984. The average household size in South Gate is 3.2 persons per household which is slightly greater than the average household size of 2.7 persons per household for Los Angeles County. Table 8 shows how household characteristics have changed through time and Table 9 provides detailed household characteristics at the tract level.

The number of households in South Gate increased by 200 between 1970 and 1980 during which time the population increased by almost 10,000 people. This is an indication that as household size has been steadily increasing and is a reflection of the recycling of South Gate housing from older owners to younger, larger, and predominantly Hispanic families. Table 9 shows household characteristics by census tract. The two tracts in the southwestern portion of the City with the largest household size are also the tracts which have had the largest increase in Hispanic population.

Tables 8 and 9 also indicate that households in South Gate remain predominantly families. In fact, the percentage of family households increased somewhat between 1970 and 1980. This is again an indication that South Gate housing is recycling.

There was a decline in the number of single-person households between 1970 and 1980. In addition, the average household size has increased significantly from 1970 to 1984, both as a result of larger families and fewer single-person households in the City. Single-person households represent underutilized housing stock, since virtually all housing units are built to accommodate at least two people without crowding. South Gate could add some 5,500 people to its population without an increase in crowding simply by increasing the occupancy of these units. Single-person households are generally elderly or young unmarried people.

TABLE 8: HOUSEHOLD CHARACTERISTICS

Characteristic	1970	1980	1984
Total households	22,719	22,883	22,920
Total Families	16,576	16,746	n/a
% families	72.9	73.1	
1 person	5,776	5,331	n/a
% singles	25.4	23.3	
Average size	2.5	2.9	3.2
Overcrowded (1.01+ person per room)	1,417 6.2	4,238 18.3	n/a

Source: U.S. Census (1970, 1980)
California Department of Finance

TABLE 9: 1980 HOUSEHOLD CHARACTERISTICS BY CENSUS TRACT

Census Tract	Total	Families No. %	Singles No. %	Average Size	Overcrowded Households
355	228	182 (69.1)	707 (26.6)	2.90	596 (22.7)
5356.01	2910	2,206 (75.8)	605 (20.8)	3.24	820 (28.2)
5356.02	1580	1311 (82.9)	231 (14.6)	3.54	545 (34.5)
5357	2670	1905 (72.2)	666 (25.1)	2.91	468 (17.5)
5358.01	2334	1671 (71.8)	574 (24.7)	2.89	479 (20.5)
5358.02	1543	1104 (72.5)	390 (25.6)	2.91	279 (18.1)
5359	2952	2199 (74.1)	682 (23.0)	2.78	346 (13.0)
5360	966	671 (69.8)	253 (26.3)	2.90	221 (22.9)
5361	3412	2433 (71.5)	820 (24.1)	2.65	344 (10.1)
5362	1888	1414 (77.1)	403 (22.0)	2.64	140 (7.4)
TOTAL	2,883	6,746 (73.4)	331 (23.4)	1.9	4238 (18.3)

Source: 1980 U.S. Census

As these two tables also indicate, the incidence of overcrowding among South Gate households has increased since 1970. In 1970, only 6.2% of the households were overcrowded (that is, had more than 1.01 persons per room). By 1980, the percentage had risen to 18.3%. As Table 9 shows, most of the overcrowding problems are located in the southwest, the area with the largest average household size. Since illegal immigrants are not counted in the estimates of crowding, it is likely that the problem is understated by the census.

Table 10 shows other households who are considered to have special needs under state housing law. Although the elderly make up 10.8% of the population, they represent only 9.7% of the household heads. This indicates a predominance of multi-generational households, with older people living with their children. This pattern is somewhat unusual in the Los Angeles region, where the elderly (aged 65 or more) represent a greater proportion of the household heads than they do of the population as a whole. Notice that the number and proportion elderly households declined between 1970 and 1980. This is consistent with the recycling of the City's housing stock that is occurring.

TABLE 10: HOUSEHOLDS WITH SPECIAL NEEDS

HOUSEHOLD TYPE	1970		1980	
	#	%	#	%
Elderly (65+)	7026	(30.9)	2223	(9.7)
Handicapped	not available		3144	(13.7)
Large Families (5+ members)	2189	(9.6)	4064	(17.8)
Overcrowded (1.01+ persons/room)	1427	(6.2)	4238	(18.3)
Minority	not available		11,124	(48.6)
Female Head	1959	(8.6)	2754	2.1
TOTAL HOUSEHOLDS	22,719	(100.0)	22,883	(100.0)

Source: 1970 and 1980 U.S. Census

The major characteristics which control the ability of a household to acquire adequate housing is income. The median household income for South Gate is lower than that for the County as a whole and lower than that for some surrounding cities (see Table 11).

**TABLE 11: 1980 HOUSEHOLD INCOME -
SOUTH GATE REGION**

JURISDICTION	MEDIAN INCOME
South Gate	\$14,609
Bell	12,636
Bell Gardens	12,137
Cudahy	11,216
Downey	20,191
Huntington Park	11,345
Lynwood	15,099
Los Angeles	15,735
Paramount	14,969
Los Angeles County	17,551

Source: 1980 U.S. Census



Income distribution within the City is shown in Table 12. Figure 5 graphically illustrates the areas in which more than half the households are classified as lower income. These areas coincide with those which have shown the greatest population increase since 1970 and the greatest change in racial/ethnic composition.

TABLE 12: 1980 HOUSEHOLD INCOMES WITHIN SOUTH GATE

CENSUS TRACT	PERCENT VERY LOW	PERCENT LOW	PERCENT MODERATE	PERCENT UPPER	MEDIAN	PERCENT BELOW POVERTY
5355	35.5	22.8	19.3	22.4	12,242	14.7
5356.01	31.1	21.7	20.9	26.4	12,997	19.7
5356.02	33.8	20.8	17.8	27.6	12,223	21.6
5357	27.7	19.9	21.5	30.9	14,509	16.4
5358.01	31.4	21.5	22.6	24.5	12,395	16.3
5358.02	27.2	20.8	20.6	31.4	14,421	9.2
5359	24.4	17.0	18.7	39.9	17,174	8.0
5360	35.2	17.7	21.2	25.9	13,575	17.4
5361	20.3	15.6	23.3	40.8	18,099	8.3
5362	24.0	17.8	18.2	40.0	16,641	11.7
TOTAL	28.3	19.4	20.6	31.7	14,609	14.2

Source: 1980 U.S. Census

Note: Poverty level thresholds are shown on Table 13. Very low income is defined as earning less than 50 percent of the regional (County) median; low income is between 51 and 80 percent of the regional median; moderate income is between 81 and 120 percent; and upper income is over 120 percent of the regional median.

Table 12 also shows the number of households living below the poverty level. Poverty thresholds are nationally defined - that is, they do not take into account regional variations in the cost of living. Since California (and especially Southern California) is more expensive than other parts of that Country, the number of people living below the poverty level represents the truly poor in South Gate. Poverty thresholds are defined in Table 13.

In South Gate, 13.4% of the households are living below the poverty level. This compares with 13.1% for the County as a whole. Among the households in South Gate, those with female-heads are twice as likely to have incomes below the poverty level as all households. (Table 14 shows poverty status by household type.) In comparison, less than 2% of the elderly households in the City have incomes below the poverty level.

TABLE 13: 1980 INCOME THRESHOLDS AT THE POVERTY LEVEL

Size of Family Unit	Average	Number of Children Under 18								
		None	1	2	3	4	5	6	7	8 or more
1 Person ¹	\$ 3,686	3,774								
Under 65 yr.	\$ 3,774	3,479								
65 yr. & Over	\$ 3,479									
2 Persons ²	\$ 4,723									
HH under 65	\$ 4,876	4,858	5,000							
HH 65 & over	\$ 4,389	4,385	4,981							
3 Persons	\$ 5,787	5,674	5,839	5,844						
4 Persons	\$ 7,412	7,482	7,605	7,356	7,382					
5 Persons	\$ 8,776	9,023	9,154	8,874	8,657	8,525				
6 Persons	\$ 9,915	10,378	10,419	10,205	9,999	9,693	9,512			
7 Persons	\$11,237	11,941	12,016	11,759	11,580	11,246	10,857	10,429		
8 Persons	\$12,484	13,356	13,473	13,231	13,018	12,717	12,334	11,936	11,835	
9 or more Persons	\$14,812	16,006	16,144	15,929	15,749	15,453	15,046	14,677	14,586	14,024

1. Unrelated individual.

2. Householders.

Source: U.S. Census, 1980.

The World Almanac and Book of Facts, 1983, Published annually by Newspaper Enterprises, Inc., New York, p. 216.

TABLE 14: 1980 POVERTY STATUS BY HOUSEHOLD TYPE

HOUSEHOLD TYPE	POVERTY LEVEL			
	BELOW	%	ABOVE	%
Elderly (65+)	85	(1.2%)	6,952	(98.8%)
Families	1,751	(17.5%)	8,278	(82.5%)
Children Under 5	523	(20.7%)	1,999	(79.3%)
Children 6 - 17	688	(13.9%)	4,272	(86.1%)
Children 0 - 17	540	(21.2%)	2,007	(78.8%)
Female - head	839	(30.5%)	1,915	(69.5%)
With Children	780	(41.8%)	1,088	(58.2%)
Without Children	59	(6.7%)	827	(93.3%)
Total Households in Poverty	3,055	(13.4%)	19,758	(86.6%)
Total Households	22,813			

Source: 1980 U.S. Census

Note: Poverty levels are defined in Table 13.

However low a household's income, it is not considered to need assistance unless it is paying more than it can afford for housing, or living in substandard and overcrowded conditions. The Federal Department of Housing and Urban Development considers that a household should not have to pay more than 30% of its gross monthly income for housing otherwise it is likely to have to forego other necessities such as food, clothing, or medical care. Table 15 shows housing expenditures as a percentage of income for owner and renter households in South Gate in 1980. As might be expected, low-income and very low-income renter households are most likely to be overpaying for housing. Generally, overpayment by owners is not considered as serious as overpayment by renters, because homeowners will always have the option of selling to relieve the monthly mortgage burden. In many cases, moderate and upper-income households will overextend themselves by federal standards in order to buy into the home equity ladder. It is likely that a good portion of the 783 moderate and upper-income households in South Gate who are overpaying have chosen to do so.

TABLE 15: 1980 HOUSING EXPENDITURES AS A PERCENTAGE OF INCOME

INCOME/COST	RENTERS		OWNERS	
	#	%	#	%
Very Low Income (less than \$8,782)				
Spent less than 30%	896	11	1,097	61
Spent more than 30%	3,232	78	689	39
Low Income (\$8,783-14,050)				
Spent less than 30%	1,445	68	984	72
Spent more than 30%	693	32	377	28
Moderate Income (\$14,051 - \$21,076)				
Spent less than 30%	2,164	86	1,688	79
Spent more than 30%	362	14	452	21
Upper Income (\$21,077+)				
Spent less than 30%	1,848	99	3,849	92
Spent more than 30%	10	1	331	8

Source: 1980 U.S. Census

C. Housing Stock

As of January 1, 1984, the Department of Finance estimated that there were 23,663 housing units in South Gate. Over half of these were built before 1950, and over 80% of the units were built before 1960. Table 16 shows the age of South Gate's housing stock. Since 1970, the City has added only 1600 units but over 17,000 people. This has led to some significant changes in housing tenure and housing condition. Table 17 shows the change in housing tenure between 1970 and 1980. There has been a decline in rental housing and an increase in owner-occupied housing. Demand for housing in South Gate is high and as a result, the vacancy rate has remained low. A 1984 vacancy survey by the Federal Home Loan Bank Board showed the vacancy rate for single-family units in South Gate as 1.0%, and for multi-family units, 1.3%.

TABLE 16: AGE OF HOUSING STOCK

YEAR BUILT	UNITS	PERCENT
Before 1939	4,460	18.8
1940 - 49	9,510	40.2
1950 - 59	5,532	23.4
1960 - 69	2,563	10.8
1970 - 79	1,524	6.4
1980 - 83	74	0.3
TOTAL	23,663	100.0%

Source: 1980 U.S. Census
California Department of Finance

TABLE 17: HOUSING TENURE - 1970-1980

TENURE	1970		1980	
	UNITS	%	UNITS	%
Owner-occupied	11,047	46.8	11,657	49.4
Renter-occupied	11,672	49.5	11,227	47.6
Vacant	882	3.7	705	3.0

Source: 1970 and 1980 U.S. Census

Overcrowding has become an increasing problem in South Gate as a result of the increasing population and household size without concomitant expansion of the housing stock. Table 18 shows the number of rooms per unit for each census tract. The census defines as rooms all enclosed areas which can be used year round, including enclosed porches and patios, kitchens (but not pullman kitchens), and excluding bathrooms. A unit must have more than three rooms in order to house the 1984 average size South Gate household of 3.2 persons without crowding. Over a third of the units in the north and western portions of the City have three or fewer rooms. Most of the housing in the City is two bedroom cottages built right around World War II. These units need to be expanded to accomodate the new, larger households in the city. Overcrowding is worst in those areas having predominantly small units.

TABLE 18: UNIT SIZE BY CENSUS TRACT

Census Tract	Median Number Rooms	Two or Fewer Rooms		Three Rooms		Four Rooms		Five Rooms		Six or More Rooms	
		#	%	#	%	#	%	#	%	#	%
5355	3.8	414	15	763	28	697	26	521	19	332	12
5356.01	3.7	482	16	868	29	758	26	541	18	338	11
5356.02	3.9	291	18	357	22	388	24	395	24	200	12
5357	4.3	273	10	641	23	625	22	676	25	566	20
5358.01	3.8	313	13	632	26	842	34	430	18	212	9
5358.02	4.2	161	10	319	20	495	31	409	25	221	14
5359	4.8	171	6	370	12	670	22	1048	35	755	25
5360	3.6	134	13	323	33	280	28	175	18	82	8
5361	4.6	336	10	490	14	802	23	998	29	853	24
5362	4.9	99	5	239	12	393	20	624	33	580	30
TOTAL	4.2	2674	11	5002	21	5950	25	5817	25	4139	18

Source: 1980 U.S. Census

As a result of this crowding, there has been increasing pressure to expand the living space in the older units including the conversion of garages, attics, and porches to year-round housing. Conversions of garages are particularly undesirable because they result in on-street parking on narrow streets which cannot support it.

Expansion of some of the older single-family units in the City is difficult because of the small lots on which they sit. A few of the original subdivisions had lots of only 25 to 30 feet in width. Other areas have houses which were not well built to begin with and include those areas which have suffered the greatest housing deterioration since 1970. Figure 6 shows the areas having concentrations of substandard housing. A recent windshield survey (January, 1984) identified 1172 deteriorated or dilapidated units in the City. If the current overcrowding (and resulting heavy use) of the City's housing is not corrected, it can be expected to lead to further deterioration.

Land Use

III. LAND USE

A. Existing Land Use

Little has changed since a 1973 Land Use Survey described the the distribution of major land uses within South Gate. Developed land (residential, commercial, industrial, etc.) accounts for approximately 71 percent of the City's total land area with the remaining 35 percent devoted to freeways, streets, alleys, rights-of-ways, and vacant land.

For planning purposes, the City of South Gate was divided into eleven planning areas which correspond to the eleven planning districts identified in previous studies. The boundaries of each planning area were delineated using major streets, topographical and man-made barriers, and similarities in land use. The locations and approximate acreages of the eleven planning areas are shown in Figure 7. These acreages refer to utilized land and do not include acreage devoted to streets, alleys, special rights-of-ways, or the Los Angeles River Channel.

Land uses in the City of South Gate were determined using previous studies and aerial photographs and verified by field surveys. Land uses were placed in five major categories which included residential, commercial, industrial, public institutional and vacant. Residential land uses were further subdivided into single-family residential and multi-family residential (two or more units). In addition, a separate survey of vacant parcels was conducted which identified the acreage and zoning designations of the individual vacant parcels. The resulting land use information is shown in Figures 8 through 18.

The distribution of the seven major land use categories in terms of area is shown in Table 19.

TABLE 19: LAND USE IN SOUTH GATE

Land Use	Acreage	% of Total Area
Residential	1,920	40.0
Commercial	304	6.3
Public/Institutional	316	6.6
Industrial	895	18.7
Vacant	32	.7
Other	1,327	27.7
Total	4,794	99.8

Source: C/B/A

Residential: Residential land uses total approximately 1,920 acres or approximately 40 percent of the City's total land area. Of this total acreage devoted to residential land use, approximately 68 percent consists of single-family units and the remaining area consists of multiple-family units (two or more units).

The residential areas are located throughout the City with the exception of an area generally east of the Santa Fe railroad and north of Imperial Highway, which is primarily industrial. An itemization of housing types in South Gate based on information derived from the 1980 census indicates approximately 60 percent of the residential units in the City are classified as single-family. Of the remaining 9,305 units classified as multiple-family units, 9.2 percent were classified as duplex units, 34.4 percent contained 3 to 4 units per structure, 35.9 percent contained 5 to 9 units in each structure, and the remaining 20.5 percent were in multiple family units containing 10 or more units. Table 21 provide a breakdown of housing types in each of the census tracts located in South Gate.

The majority of the multiple-family units (two or more units) are located in the western half of the City on parcels that were originally developed with single-family units. Approximately 5,400 multi-family units, 58 percent of the total number of multiple-family units in South Gate, are located in an area north of Tweedy Boulevard and west of Otis Street (see Figure 19. Those neighborhoods that are predominantly single-family in character are located in an area roughly east of San Gabriel Boulevard and south of Firestone Boulevard (see Figure 20).

There has been considerable pressure to convert single-family areas to multi-family uses allowed by zoning since the population growth of the 1970's began. Pressure to recycle residential areas to higher density use is expected to continue in the near future because demand for housing in the City is so high.

When comparing the housing types identified in the 1970 census to those identified in the 1980 census, the trends towards higher residential densities are clearly evident. In the 10 year period, the number of residential units increased by only 77 units. During that same period, there was a net loss of 1,252 single-family units and 203 duplex units which represents a -8.1 percent and -19.2 percent decline respectively. Approximately 8 percent of South Gate's single-family housing stock was lost to multi-family development and non-residential land uses in the 10-year period between 1970 and 1980. Table 20 provides a comparison between housing types in 1970 and 1980.

TABLE 20: RESIDENTIAL TRENDS: 1970-1980

Housing Type	1970		1980		1970-1980	
	No.	%	No.	%	No.	%
Single-family	15,536	66.1	14,284	60.6	-1,252	- 8.1
2-units	1,055	4.5	852	3.6	- 203	- 19.2
3-4 units	2,822	12.0	3,204	13.6	+ 382	+ 13.5
5-49 units	4,013	17.1	4,952	21.0	+ 939	+ 23.4
50 or more units	86	.3	297	1.3	+ 211	+245.3
Total	23,512	100.0	23,589	100.1	+ 77	+ .3

Source: 1980 U.S. Census
Department of Finance
South Gate Building Dept.

TABLE 21: HOUSING TYPES IN SOUTH GATE BY CENSUS TRACT - 1980

Census Tract	Single-Family		2-Family		3-4 Units		5-9 Units		10 or more Units	
	No.	%	No.	%	No.	%	No.	%	No.	%
5355	1,328	9.3	194	22.8	466	14.5	580	17.4	159	8.3
5356.01	1,400	9.8	156	18.3	602	18.8	479	14.4	350	18.3
5356.02	959	6.7	33	3.9	323	10.1	197	5.9	119	6.2
5357	1,724	12.1	94	11.0	569	17.8	285	8.5	111	5.8
5358.01	1,034	7.2	101	11.9	358	11.2	663	19.9	274	14.3
5358.02	1,119	7.8	48	5.6	116	3.6	205	6.1	119	6.2
5359	2,349	16.4	48	5.6	226	7.1	296	8.9	95	5.0
5360	429	3.0	53	6.2	214	6.7	222	6.7	77	4.0
5361	2,504	17.5	69	8.1	211	6.6	309	9.3	387	20.2
5362	1,438	10.1	56	6.6	119	3.7	101	3.0	221	11.6
Total	14,284	99.9	852	100.0	3,204	100.1	3,337	100.1	1,912	99.9

Source: 1980 U.S. Census

Commercial: Commercial land uses within South Gate total 304 acres or approximately 8.8 percent of the City's total developed acreage (excluding streets, roads, rights-of-ways, etc.). Commercial land uses occur primarily as strip commercial developments located adjacent to the major arterials which traverse the City (Firestone Boulevard, Long Beach Boulevard, Atlantic Boulevard, Tweedy Boulevard, California Avenue, Century Boulevard). Some of the older commercial areas are beginning to exhibit signs of deterioration and blight.

The central business district is considered to be the section of Tweedy Boulevard between Long Beach Boulevard and Hunt Avenue. A survey conducted in 1982 identified approximately 229 commercial establishments in the downtown. In addition, six neighborhood shopping centers are located within the City. Two shopping centers are located in the vicinity of the downtown area. They include the Ralphs/Thrifty Shopping Center on the northwest corner of Tweedy Boulevard and Otis Avenue, and the Sav-on Shopping Center located on the south side of Tweedy Boulevard between San Carlos Avenue and San Gabriel Avenue. South Gate Plaza is located on the northeast corner of Long Beach Boulevard and Park Place. A fourth commercial center is located just east of the Long Beach Freeway at the Firestone offramp and includes a Target Store. A Lucky Market located on the northwest corner of State Street and Firestone Boulevard and a Market Basket on California Avenue are two other major commercial activities. The location of commercial land uses and the six commercial centers are shown in Figure 21.

The City has directed efforts towards commercial revitalization to two areas in particular. These areas are (1) the section of Tweedy Boulevard between Long Beach Boulevard and Hunt Avenue and (2) that portion of Garfield Avenue between McKinley Avenue and the southern boundary of the City as it crosses Garfield. The former includes what is generally considered to be the downtown central business district in the City and the latter area is referred to as Hollydale. The focus of the City's efforts has been the upgrading of public improvements (landscaping, street furniture, etc.) and assistance to private owners in upgrading their property.

The Hollydale redevelopment project is considerably smaller than the commercial area along Tweedy Boulevard. The Hollydale commercial project serves residents living in the southeastern corner of the City, adjacent to Downey. The economic base of the City is described in more detail in Section VII.

Industrial: Industrial land uses within South Gate are concentrated in four planning areas located in the northeastern portion of the City. Of the 895 acres classified as an industrial land use, 734 acres or 82% of the City's total industrial acreage is located within planning areas 2, 6, 7 and 10.

Two other major industrial sites are located near the western edge of the City and include the former General Motors facility, located south of Tweedy Boulevard and west of Santa Fe Avenue and the former Firestone Rubber facility, located north of Firestone Boulevard and west of Santa Fe Avenue. The General Motors facility was closed in March, 1982 and has a total area of acres including 29.62 acres of building space. The Firestone Plant consists of 37.97 acres of building area on five parcels with a combined area of 51.48 acres.

Public Facilities: This category includes both public and private educational facilities, churches, hospitals. A total of 155 acres is devoted to land uses within this category. The public facilities are described in more detail in section V within this report.

Open Space: There is very little undeveloped land remaining in South Gate and the majority of the remaining open space within the City is restricted to parks, utilities easements, and scattered undeveloped parcels. The total area of open space land, including parks, is estimated to be approximately 309 acres. The locations and descriptions of the park facilities in South Gate are discussed in more detail in Section V of this report.

The distribution of land uses identified in a 1973 survey and the distribution of existing land uses are shown in Table 22. The acreage devoted to residential land uses have changed very little though there has been a significant increase in the acreage devoted to multiple-family residential acreage. This trend is consistent with the findings identified elsewhere in this report.

Commercial acreage increased by 58 acres (24 percent) in the period between 1973 and 1985 and industrial land uses decreased by 19 acres (2 percent) during the same period. Major commercial developments, including South Gate Plaza and the developments east of the Long Beach Freeway at Firestone Boulevard account for much of the increase in commercial land uses. The decrease in industrial land uses may be attributed to the commercial developments being constructed on land previously devoted to industrial uses. The increase in public land uses is attributed to the expansion of park facilities that have taken place since the 1973 survey.

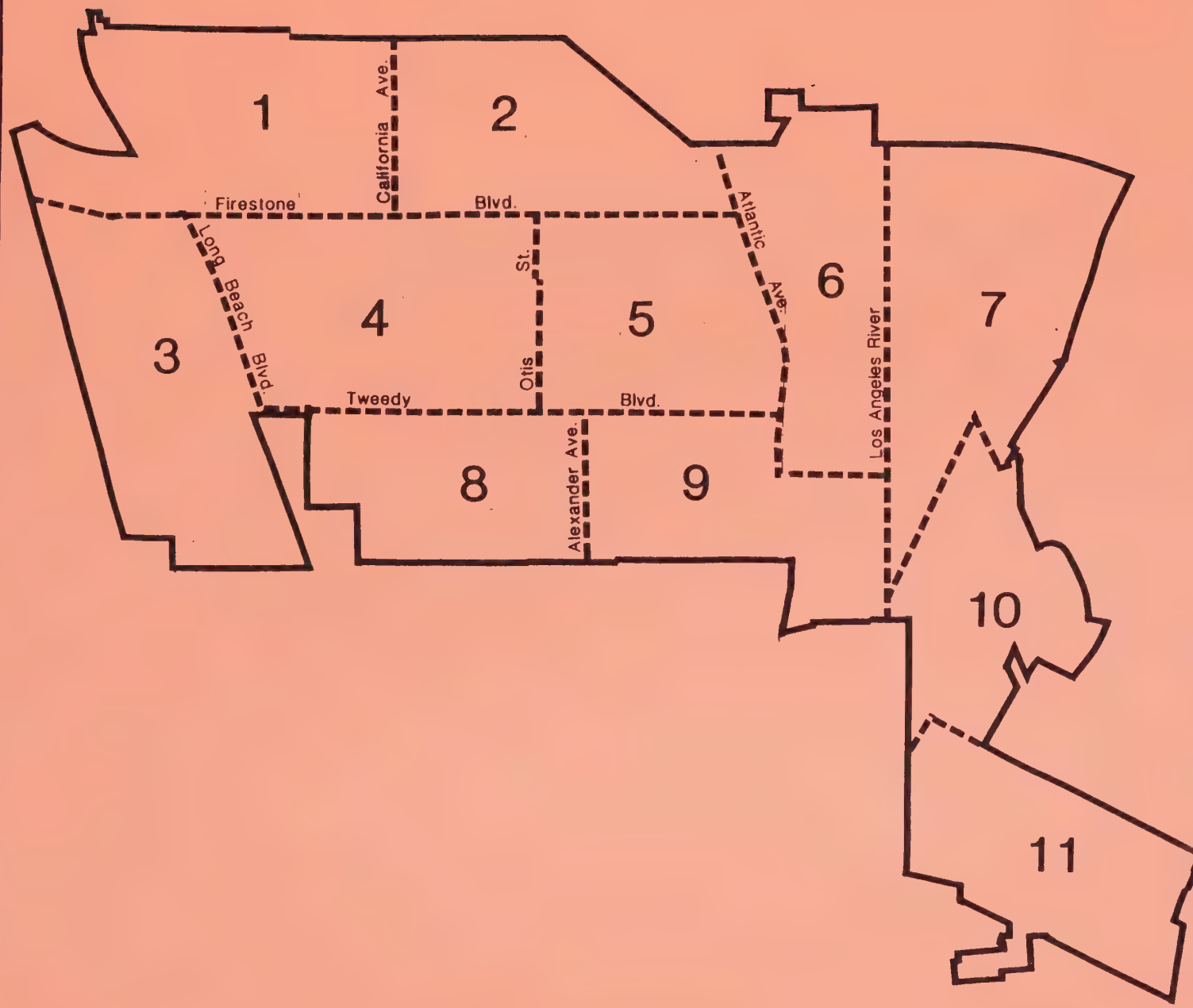


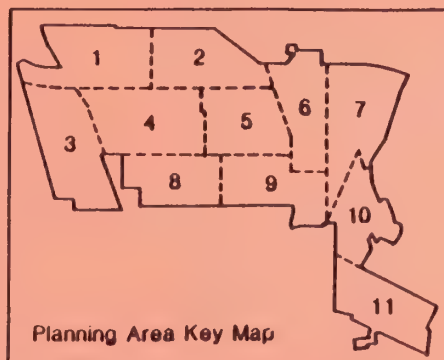
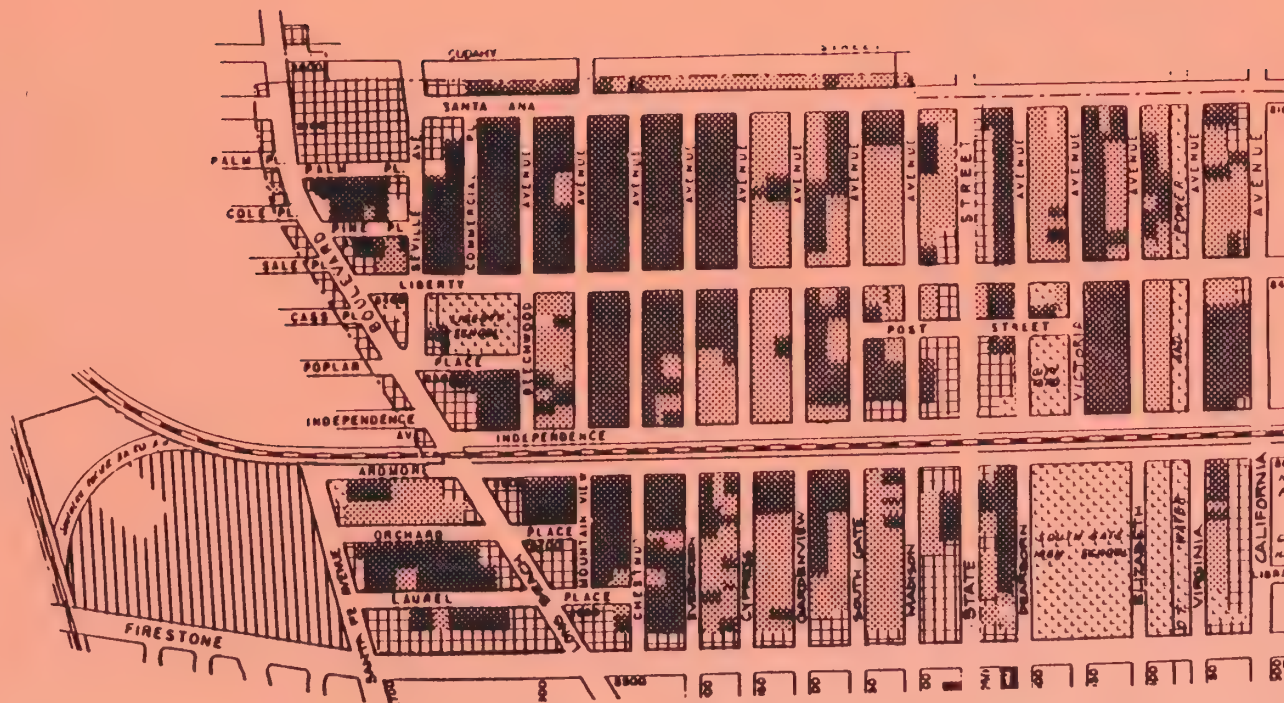
Figure 7
Planning Areas



TABLE 22: Comparison of Major Land Use Categories: 1972-1985

Land Use	1973		1985		Change 1972 -1985
	Acreage	(%)	Acreage	(%)	
Residential	1922	40.1	1920	40.0	-2 acres
Single-family	1422	29.7	1297	27.1	-125 acres
Multi-family	500	10.4	623	12.9	+123 acres
Commercial	246	5.1	304	6.3	+58 acres
Industrial	914	19.1	895	18.7	-19 acres
Public (incl. parks)	206	4.3	316	6.6	+110 acres
Other	1506	31.4	1360	28.4	-146 acres

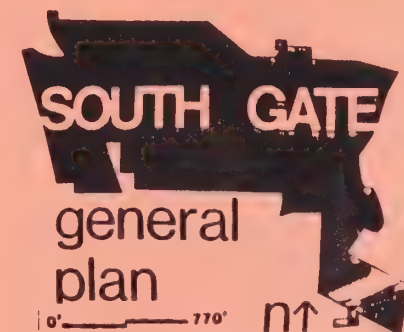
Sources: City of South Gate
Cotton/Beland/Associates, Inc.

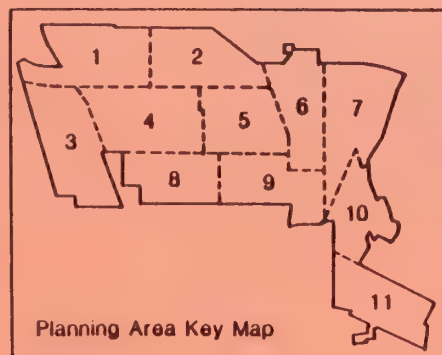
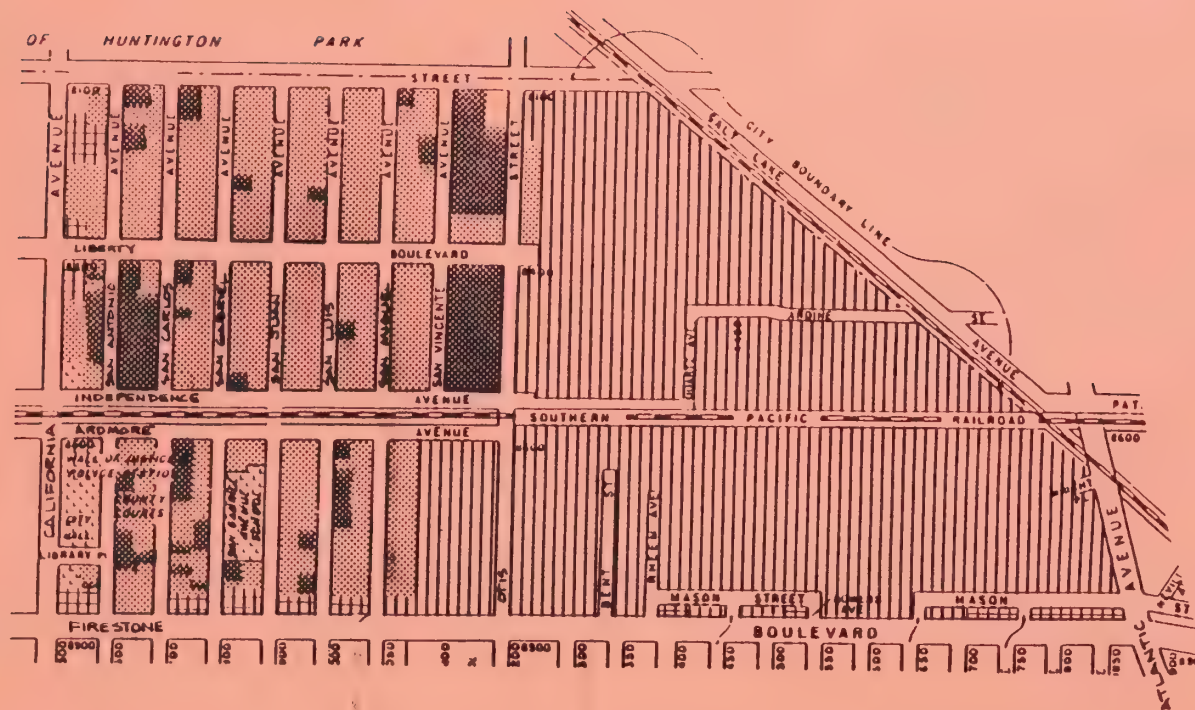


SOURCE: CBA



Figure 8
Generalized Land Use
Planning Area 1

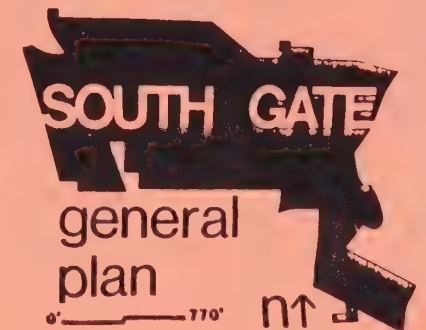


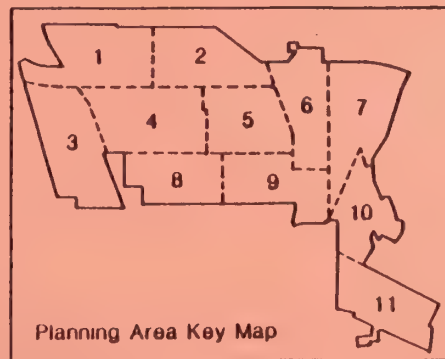


SOURCE: CBA



Figure 9
Generalized Land Use
Planning Area 2





SOURCE: CBA

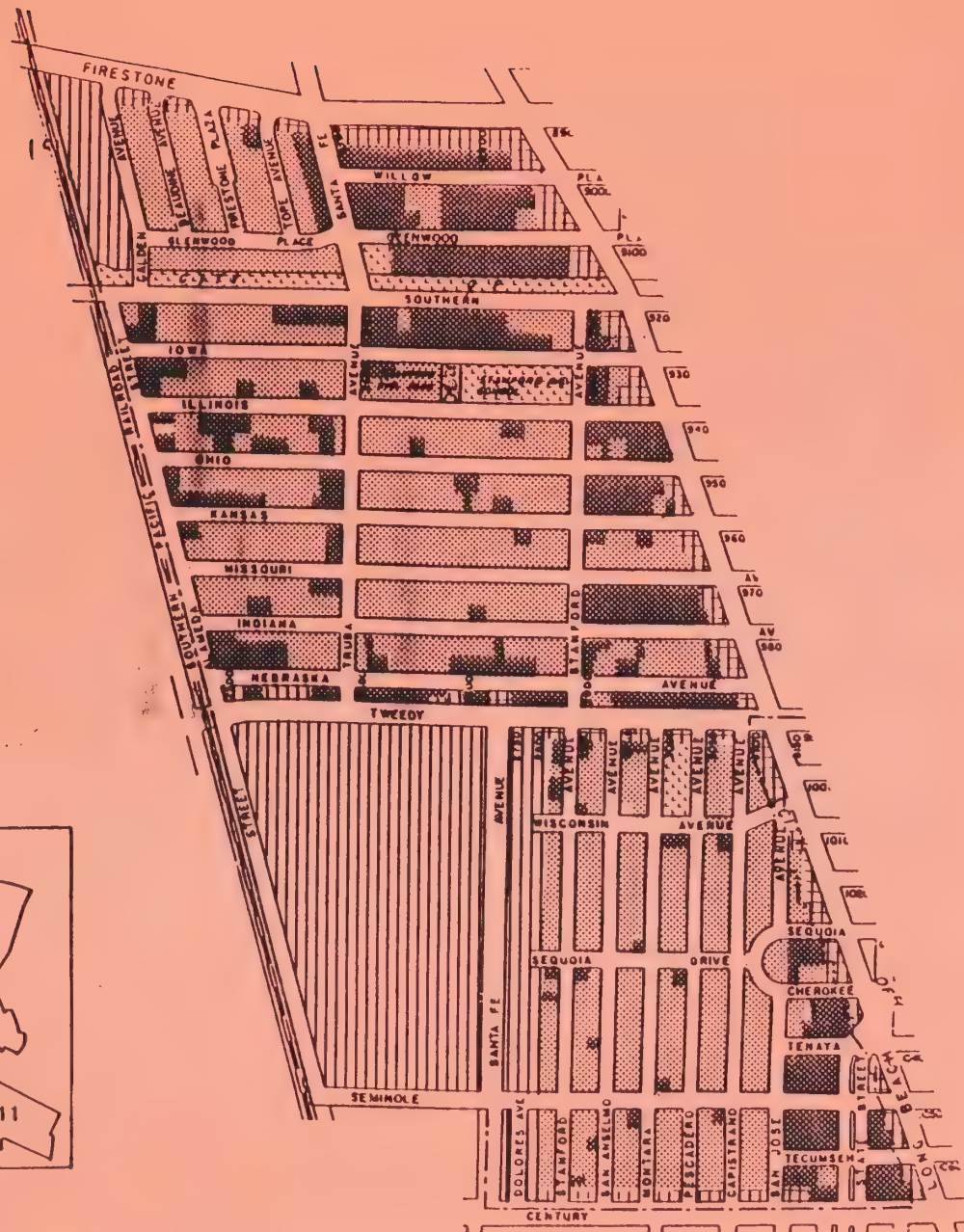
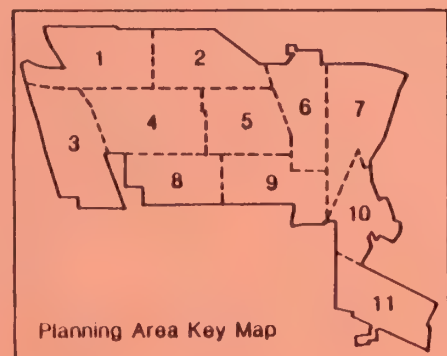
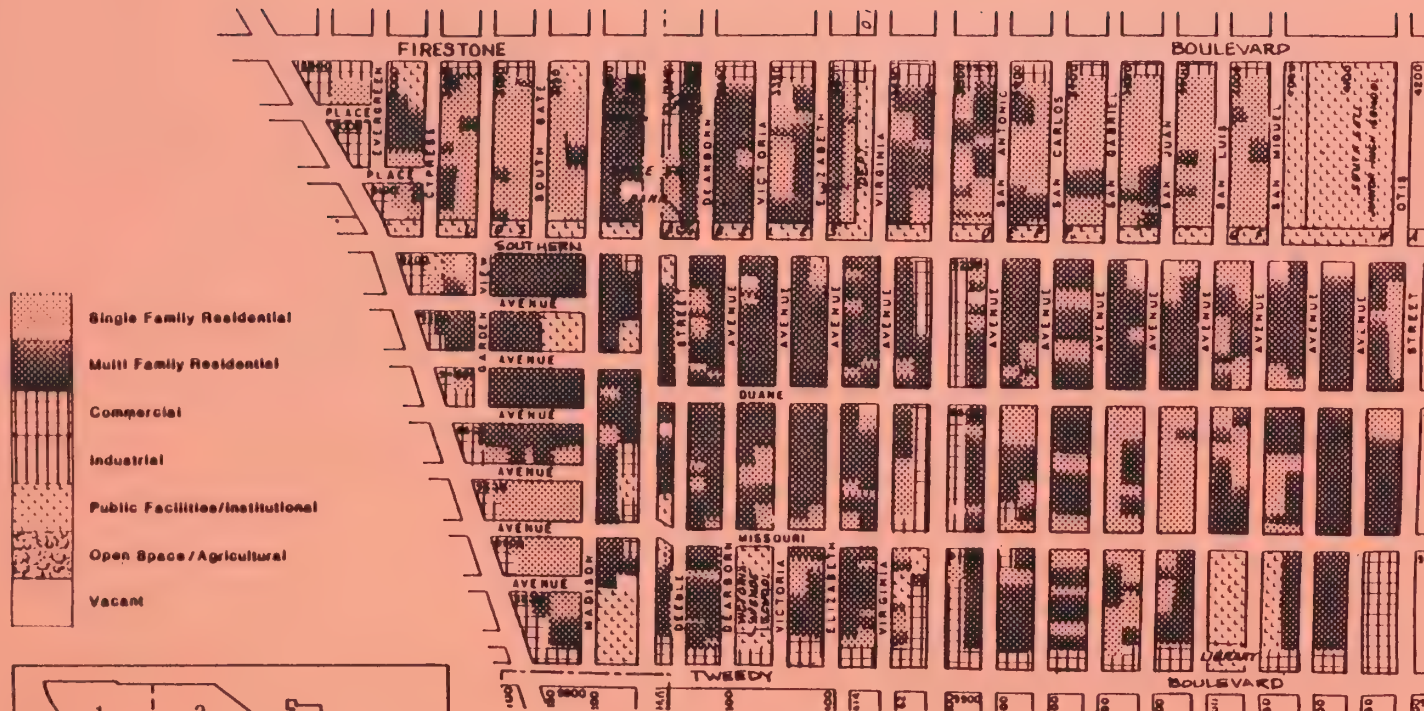


Figure 10
Generalized Land Use
Planning Area 3





SOURCE: CBA

Figure 11
Generalized Land Use
Planning Area 4



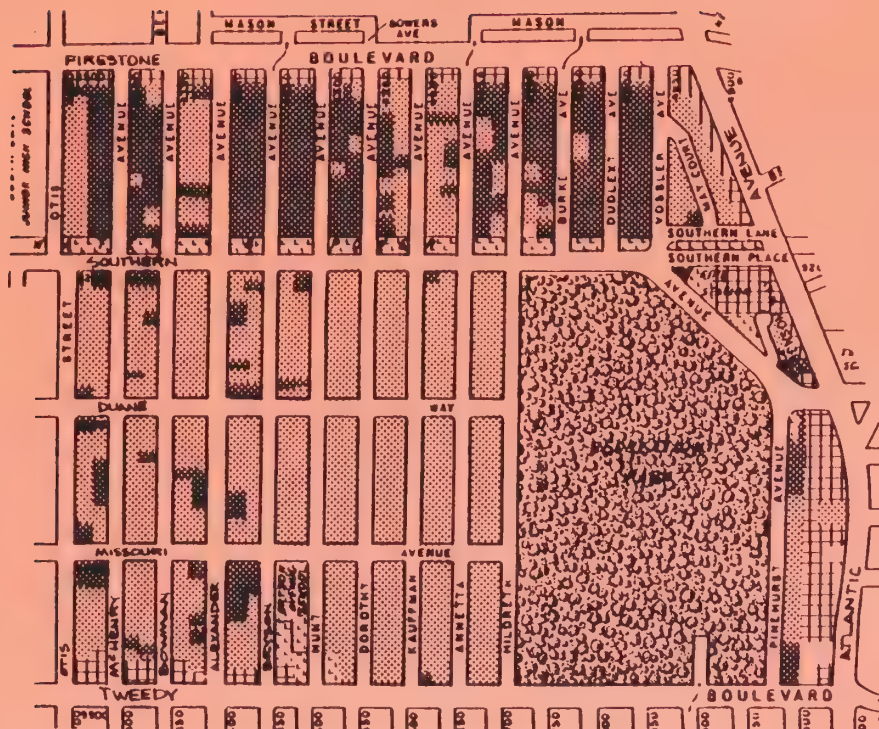
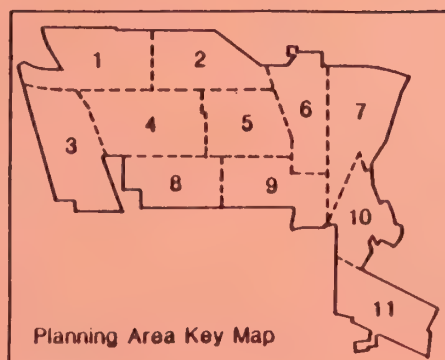
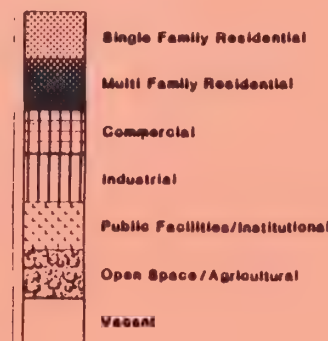
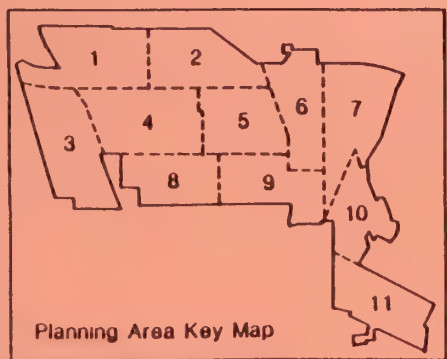
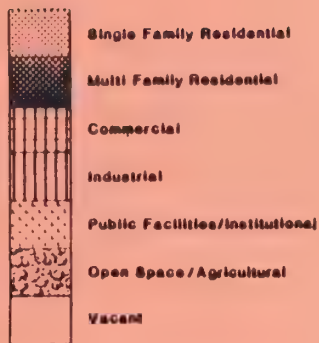


Figure 12
Generalized Land Use
Planning Area 5



SOURCE: CDA





SOURCE: CBA

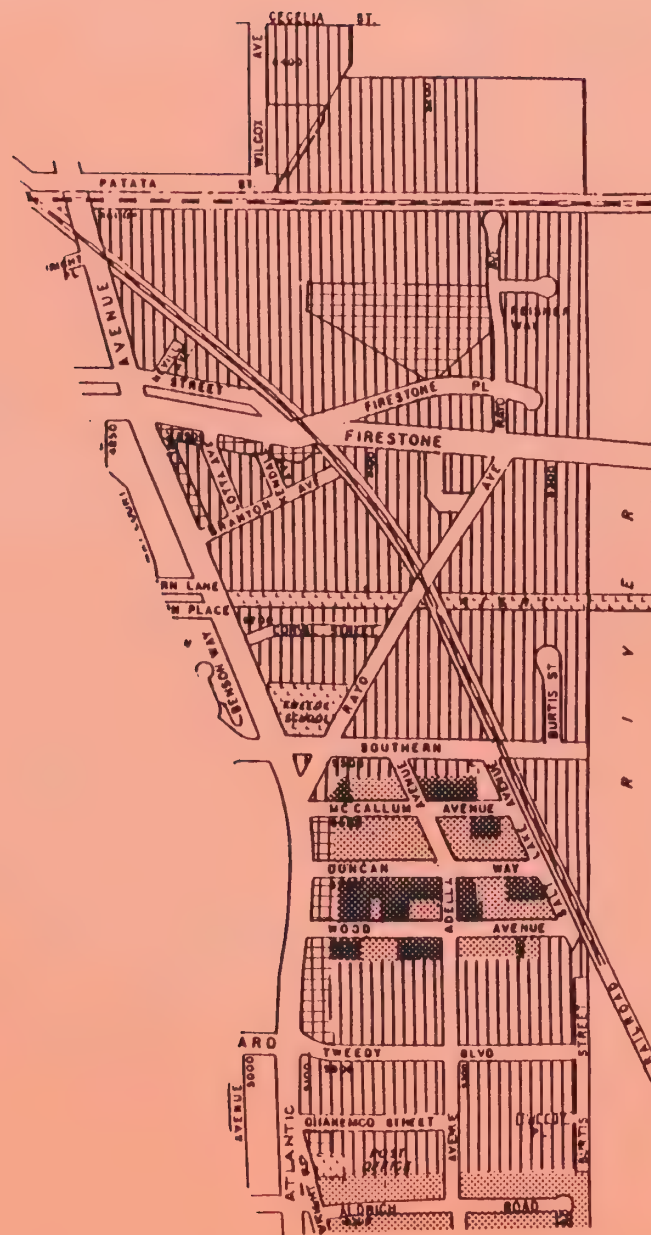
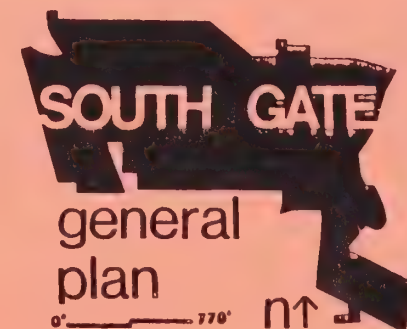
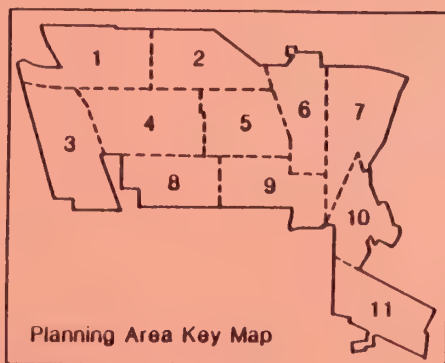
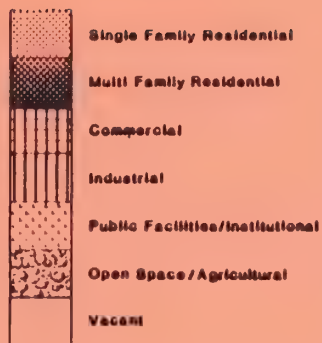


Figure 13
Generalized Land Use
Planning Area 6





SOURCE: CBA

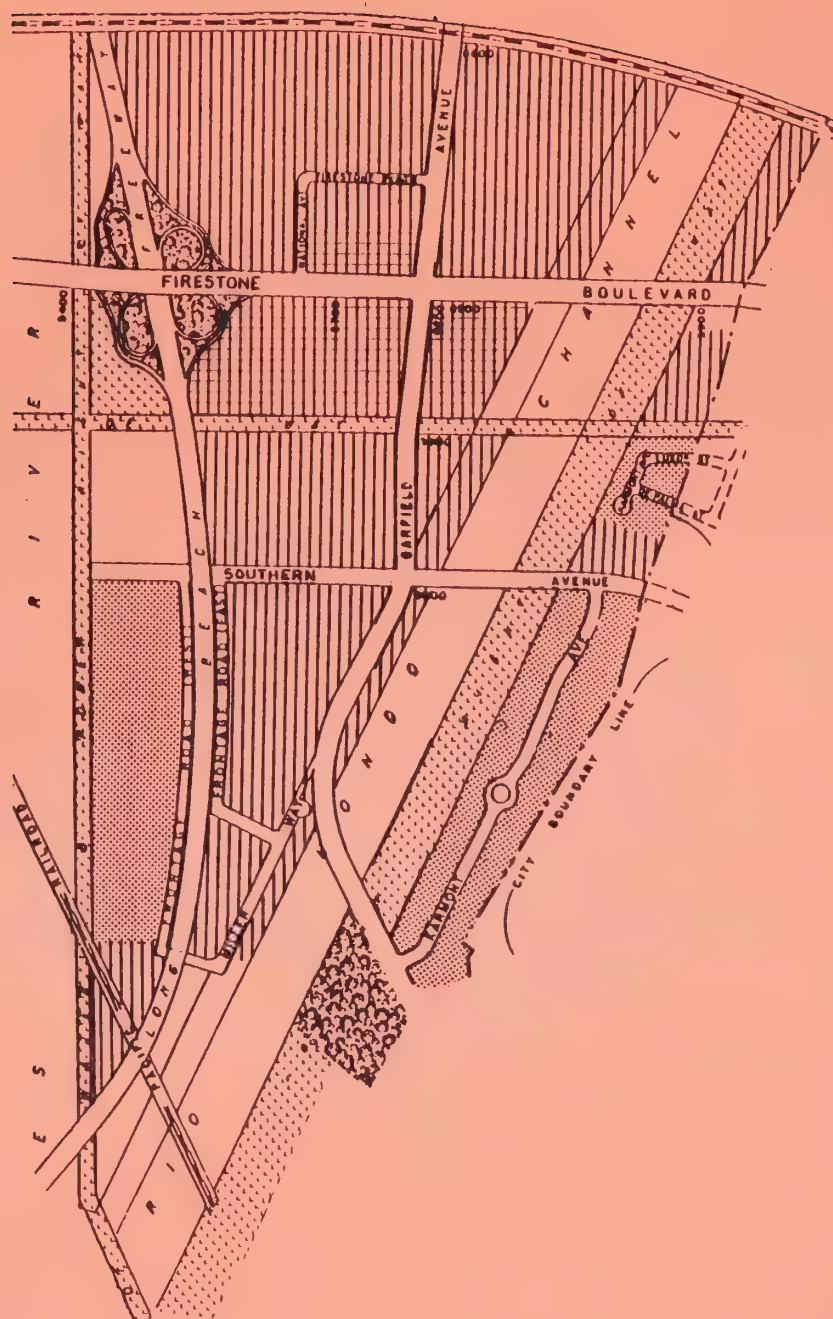
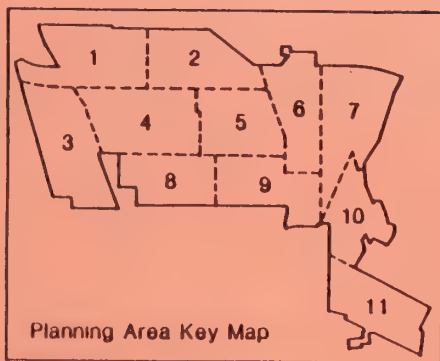


Figure 14
Generalized Land Use
Planning Area 7



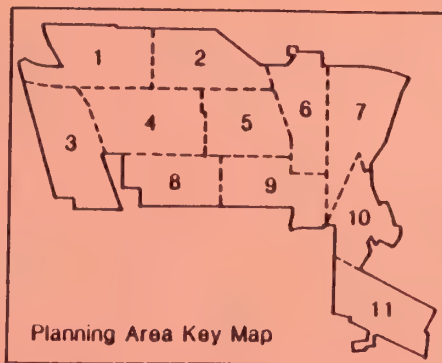
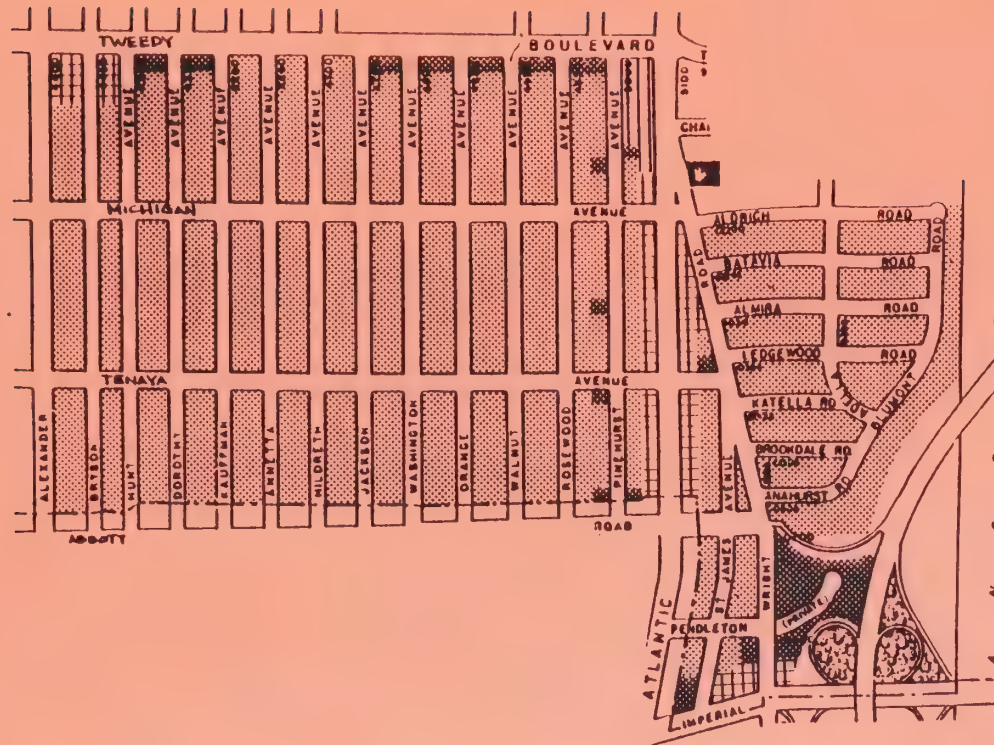


SOURCE: CBA



Figure 15
Generalized Land Use
Planning Area 8





SOURCE: CBA

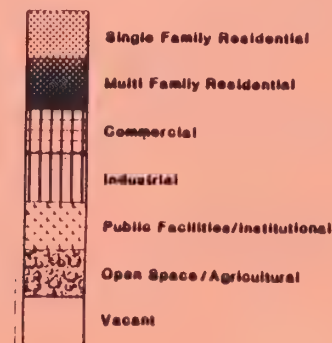
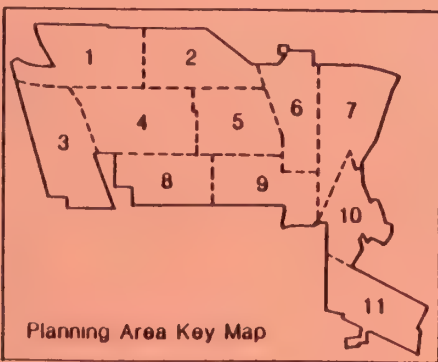


Figure 16
Generalized Land Use
Planning Area 9

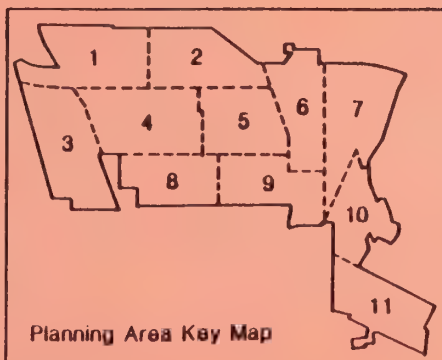




SOUTH GATE

general plan

0' ————— 770' N ↑



SOURCE: CMA

Figure 18
Generalized Land Use
Planning Area 11



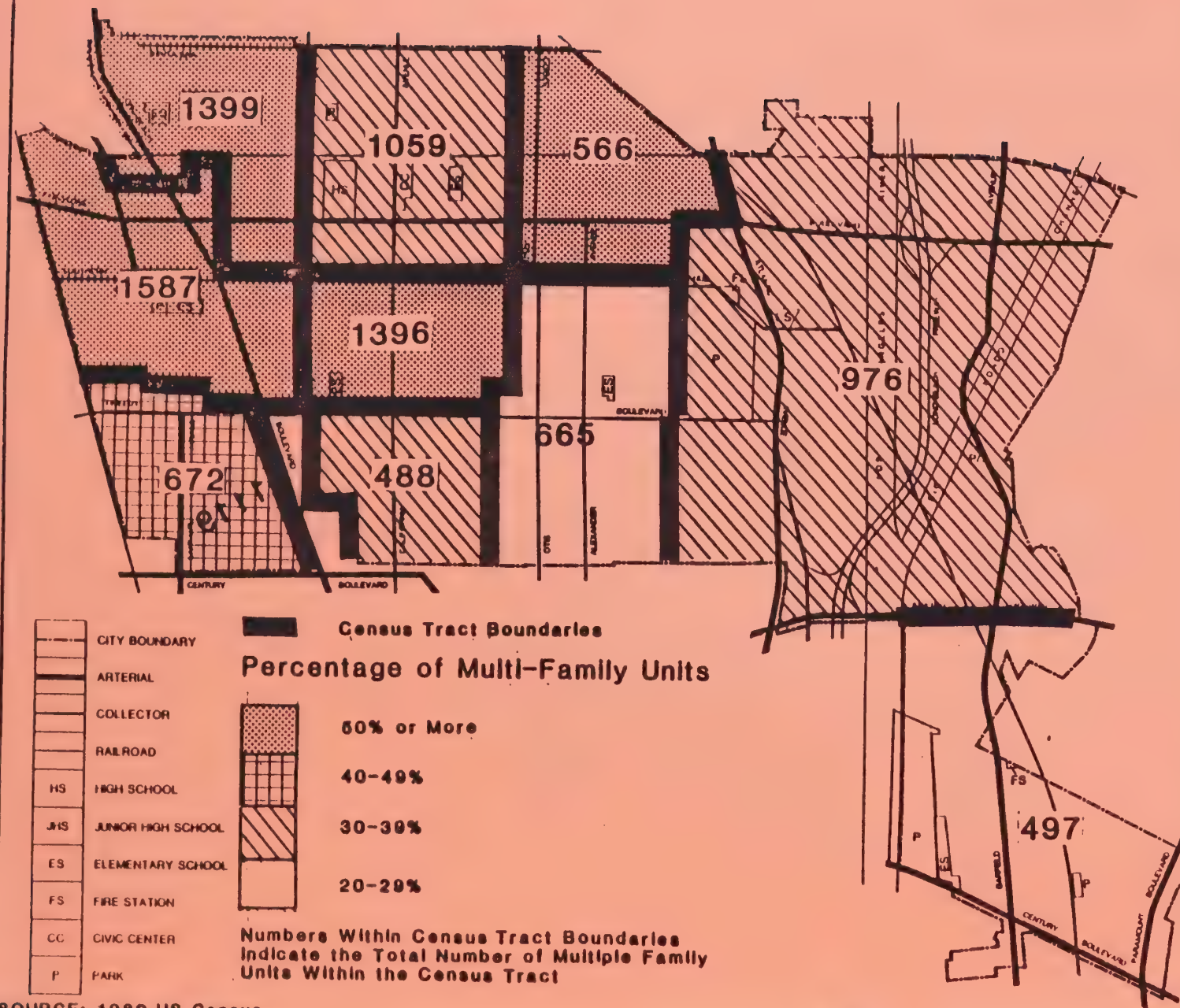
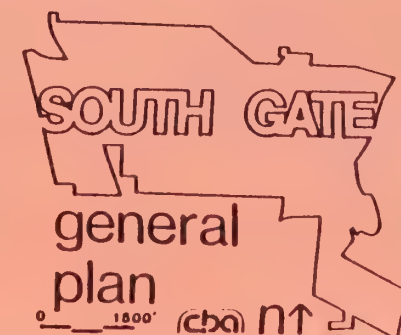


Figure 19
Location of
Multiple Family
Units



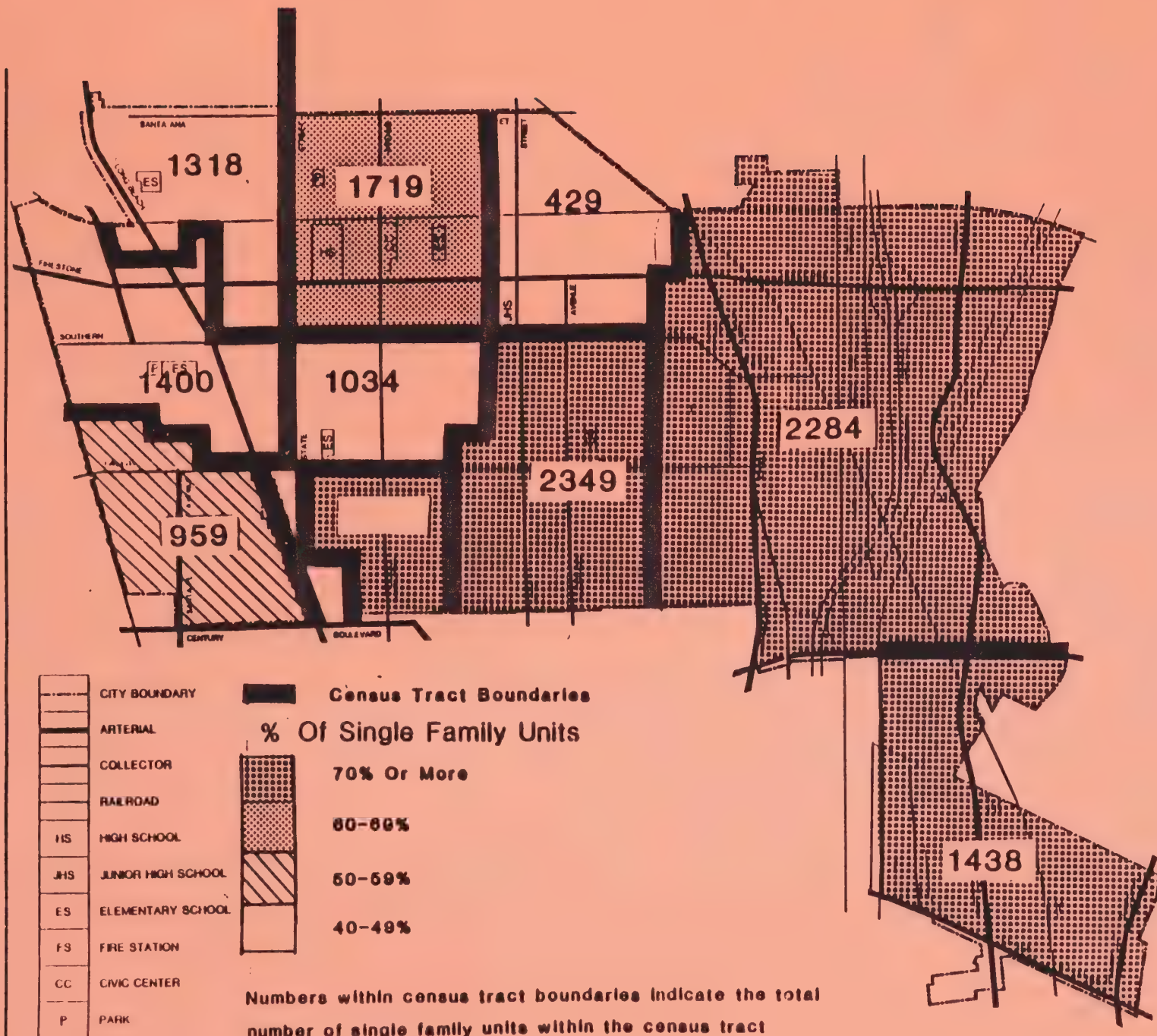
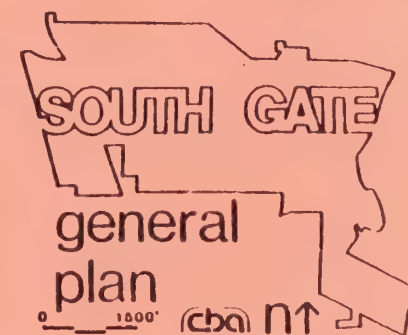


Figure 20
Location of
Single Family
Units



B. Zoning

The existing zoning ordinance in South Gate is inconsistent with the adopted land use policies and goals as identified in the City's General Plan. The zoning ordinance is the primary tool for implementing the goals and policies articulated in the General Plan, and consistency between the two is not only important, but required by State law.

The Land Use Element in the General Plan identifies various land use policies involving residential land uses including the preservation of single-family residential development and encouraging of new single-family developments to utilize substandard lots. In addition, the General Plan expressed a desire on the part of the City to maintain a balance between residential intensities with the capacities of the City's infrastructure and circulation system. The existing zoning appears to be inconsistent with the policies and goals stated in the General Plan. Approximately 68 percent of the acreage zoned for residential uses is zoned for multi-family development. In contrast, only 32 percent is zoned for single family densities. In addition, the existing zoning would allow residential development at a scale that would create serious problems with the the existing infrastructure and support services.

The acreage and allowable development densities for residential zoning is shown in Table 24. With full development and the prescribed dwelling unit densities, South Gate would have a population of 90,944 persons living in 28,420 dwelling units. This is an increase of 23 percent over the present population and a 21 percent increase in the number of dwelling units. This projection assumes that all of the R-3 and R-4 zoned acreage will be developed at a density of 20 dwelling units per acre and the existing household densities will remain at their current levels.

Table 23: Potential Residential Growth Based on Existing Zoning

Land Use	Acres	Density	Potential D.U.	Potential Population (3.2 persons/D.U.)
R-1 Single Family	569	8.0 DU/acre	4552	14566
R-2 Duplex	68	16.0 DU/acre	1088	3482
R-3 R-4 Multi-Family	1439	20.0 DU/acre	22,780 (20 du/acre)	72896

The General Plan also recognized the problems associated with the strip commercial uses located adjacent to the major arterials traversing the City. The General Plan proposed to resolve the problems associated with land uses of this type by reclassifying this acreage to more appropriate uses and to encourage the clustering of new commercial developments. The existing zoning, however, encourages the continuation of strip commercial development with substantial acreage along the major arterials zoned for commercial uses.

Circulation

IV. CIRCULATION

A. Existing Street Classification

The Circulation Element in the current General Plan for the City of South Gate was prepared in 1971 and, although a valuable tool at the time, it no longer meets the needs of the community. Some of the major changes that have occurred involve the loss of two major employers in the City, a large in-migration which appears to be increasing the population density in certain neighborhoods, and the proposal for the Delphi development in the northeast area of the City.

The purpose of this section is to evaluate the existing circulation system and to summarize the traffic analysis prepared by Monroy-Lopez Engineering and JFT Associates. Published data was the main source for traffic information; however, a major traffic data gathering effort involved speed/delay studies on the principal streets in the City. Detailed information including traffic count data, levels of service for specific street segments, speed delay studies, and intersection levels of service are contained in the South Gate General Plan Update: Evaluation of the Existing Circulation System.

The existing General Plan's Circulation Element proposes three types of streets: major, secondary, and collector streets.

Major streets include Long Beach Boulevard, Atlantic Avenue, Garfield Avenue, Paramount Boulevard, Santa Fe Avenue, Firestone Boulevard, Century Boulevard, and Imperial Highway. The recommended cross-section is 4-12' travel lanes, a 14' median and 9' parking lanes (80' curb to curb) in 100' of right-of-way.

Secondary streets include State Street, California Avenue, Otis Avenue, Main Street, Tweedy Boulevard, Santa Ana Street, and Southern Avenue. The recommended cross-section is 4-12' travel lanes and 8' parking lanes (64' curb to curb) in 80' of right-of-way.

Collector streets include Alexander Avenue, Firestone Place, Liberty Boulevard, Miller Way, Rayo Avenue, Seville Street, Wright Road, and Frontage Road East. The recommended standard for residential collector streets is 2-12' travel lanes and 8' parking lanes (40' curb to curb) in 60' of right-of-way. Industrial collector streets are to be 48' curb to curb in 64' of right-of-way.

The existing classification system is summarized on Figure 22. It should be noted that the streets shown as collectors are only 40' wide which is the current typical section for local streets in many municipalities.

B. Level of Service

The level of service at which the streets are operating was evaluated by comparing existing average daily traffic (ADT) volumes with capacity volumes for typical street sections. The speed/delay studies complement this method and present actual, "real world" information. Critical intersections were

evaluated using a modified critical movement analysis (CMA) planning method. The CMA planning method was selected because it graphically summarizes traffic movements at the intersection and is thus more understandable to the lay person. Please refer to Table 24 for a brief discussion of capacity and level of service.

1980 ADT volumes on the street system are presented on Figure 23. Because of the closing of the Firestone and General Motors plants after 1980, the 1980 volumes shown are considered to be probably higher than existing traffic volumes and thus new traffic counts were not considered essential. The 1980 counts are on the high side. This information was supplemented by recent traffic counts taken by Austin-Faust Associates in late 1984. Other sources used include the County of Los Angeles' publication, Traffic Volumes 1983, and the Caltrans' booklet, 1983 Traffic Volumes on California State Highways.

The 1980 ADTs were compared with the street sections for each street (other than local streets) and, based on the capacities for each street classification, the volume/capacity ratios were calculated using a spreadsheet computer program. The results of these calculations are presented graphically in Figure 24.

Inspection of the City map shows that there are only two streets that cross the Long Beach Freeway. Thus, it is no surprising that those two streets, Firestone Boulevard and Imperial Highway, suffer the most congestion, with a Level of Service F between Atlantic Avenue and Garfield Avenue. Other streets with a Level of Service of F are Southern Avenue between Long Beach Boulevard and California Avenue, and Tweedy Boulevard between California Avenue and Alexander Avenue.

Level of Service E exists on Long Beach Boulevard, North City Limits to Tweedy Boulevard; State Street from Firestone Boulevard to Tweedy Boulevard; Tweedy Boulevard between Alexander Avenue and Hildreth Avenue; and Firestone Boulevard from Long Beach Boulevard to Alexander Avenue and from Garfield Avenue to the East City Limits.

Level of Service D exists on Wright Road between Atlantic Avenue to Imperial Highway; Southern Avenue from California Avenue to San Juan Avenue; Tweedy Boulevard from State Street to California Avenue; and the remaining sections of Firestone Boulevard between the West City Limits and Long Beach Boulevard and also between Alexander Avenue and Atlantic Avenue.

Since Level of Service C is the typical "design" level of service, it can be seen that three major city streets exceed that level for their entire length within the City of South Gate (i.e., Long Beach Boulevard, Firestone Boulevard, and Imperial Highway). The other street with a long section of congestion is Tweedy Boulevard which exceeds Level of Service E through the downtown area. These results are for an average weekday conditions.

Detailed traffic count information was available for 4 critical intersections and these were analyzed to determine the Level of Service. The resulting calculations indicate that the Atlantic Avenue/Firestone Boulevard intersection has service level between B and C; the Atlantic Avenue/Tweedy Boulevard and Rays Avenue/Firestone Boulevard intersections have a service level of C; and the Garfield Avenue/Firestone Boulevard intersection is operating at a service level of D.

Because of the forced flow conditions mentioned above for Firestone Boulevard, the results of the intersection analyses do not reflect the conditions in the field. In other words, back-ups from the conditions downstream restrict the movement of vehicles and the vehicles counted at the intersection do not represent the actual demand to cross the intersection. As a result, the traffic volumes are relatively low and the calculated Level of Service is unrealistically good. What this probably indicates is that the traffic signals are not operating in optimal fashion. With proper signal coordination the street would probably operate at a much improved Level of Service.

The Austin-Foust Associates Traffic Study completed for the City in November, 1984 included an analysis of three years of accident data. Using a computer program Austin-Foust developed, the accident rates at critical intersections were computed and compared with "expected" accident rates from a study by the County of Los Angeles. The analysis is graphically summarized on Figure 25. Not surprisingly, the most congested street, Firestone Boulevard, has the greater number of High Accident Locations. All of these locations have an improvement project which the City is developing for implementation.

The City of South Gate's Circulation system is currently overstressed on the Major streets, especially the East/West ones. This is principally due to the fact that only Firestone Boulevard and Imperial Highway cross the Long Beach Freeway. As a result both streets are operating at below Level of Service C for the entire length within the City of South Gate. Tweedy Boulevard, another East/West street, is also operating at below Level of Service C in its downtown segments.

Because of the plant closures mentioned previously, traffic volumes on most other City streets are relatively low and operate at a good Level of Service. However, there is a growing perception that the increasing population density could result in a deterioration of the Level of Service on City streets.

C. Truck Traffic

The 1982 Federal Surface Transportation Act required states to allow trucks with increased lengths and widths to operate on the interstate highway system and to allow them access to terminal and service facilities. State Assembly Bill 886 was passed by the state legislature to implement the provisions outlined in the Federal Transportation Act. South Gate will be affected by the new laws allowing these larger trucks due to the City's proximity to the nearby freeway system and the number of truck terminals and service facilities located within the City. The points of ingress and egress on the freeways and the routes to the terminal and service facilities on local streets are to be marked with distinctive signs which are designed to prevent the larger trucks from traveling on undesignated streets. The primary concerns of the City include the following:

- ° the inadequacy of existing street widths and intersections in relation to the turning and space requirements of the interstate trucks;
- ° the increase in street and intersection congestion due to the additional time the larger trucks will require to maneuver on the existing roads;
- ° the deterioration of the City's road surfaces will be accelerated by the heavier interstate trucks; and
- ° the noise and pollution impacts could be significantly greater than those generated by the existing truck traffic.

The new law allows all interstate trucks to widen from 8 feet to 8½ feet but only tractor semitrailers (tractor-semis) and tractor semi-trailer trailers ("doubles") to increase in length. These vehicles can be any length provided that the dimension from the kingpin to the centerline of the rear semitrailer axle is 38 feet or less. The law makes no determination regarding maximum axle weight.

Levels of Service Definition

The six levels of service are generally described as follows for simple uninterrupted flows:

Level of Service A

This is a condition of free flow, accompanied by low traffic volumes and high speeds. Traffic densities will be low, with uninterrupted flow speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles and drivers can maintain their desired speeds with little or no delay.

Level of Service B

This occurs in the zone of stable flow, with operating speed beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable with a low probability that traffic flow will be restricted. The lower limit (lowest speed, highest volume) of this level of service has been used in the design of rural highways.

Level of Service C

This is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher traffic volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass. A relatively satisfactory operating speed is still obtainable with service volumes suitable for urban design practice.

Level of Service D

This level of service approaches unstable flow, with tolerable operating speeds being maintained though significantly affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver and comfort and convenience are low.

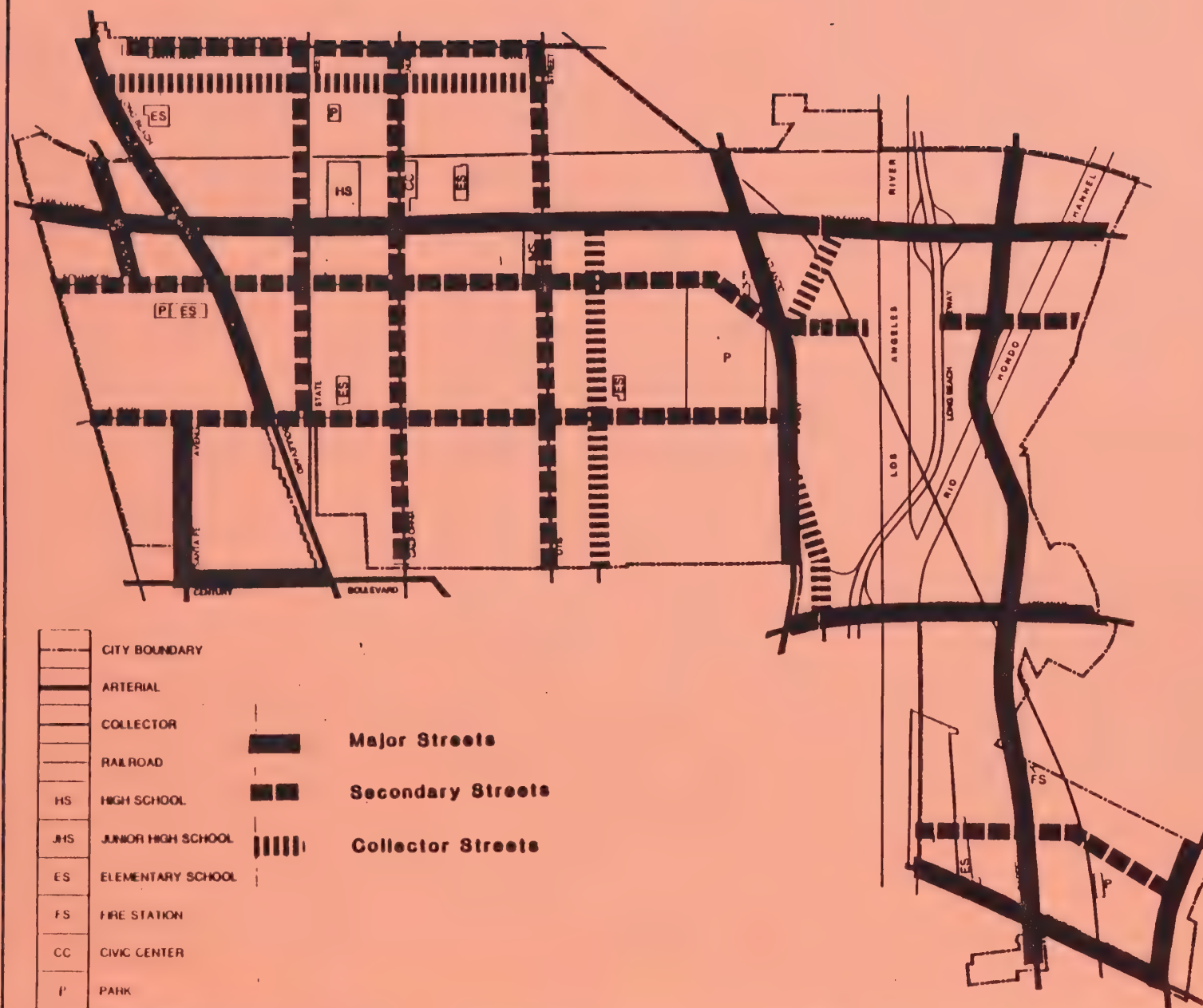
Level of Service E

This level of service cannot be described by speed alone but represents operations at lower operating speeds, generally about 30 miles per hour, with traffic volumes at or near the design capacity of the roadway. Traffic flow is unstable and there may be stoppages for short periods. This level of service is associated with the operation of a facility at design flow.

Level of Service F

This level of service describes a forced-flow operation at low speeds where volumes are above the design capacity of the roadway. In the extreme cases, both speed and volume can drop to zero. These conditions usually result from queues of vehicles backing-up from a restriction downstream. The section of the roadway under study will serve as a storage area during parts or all of the peak hour period. Speeds are substantially reduced and stoppages may occur for short or long periods of time because of the downstream congestion.

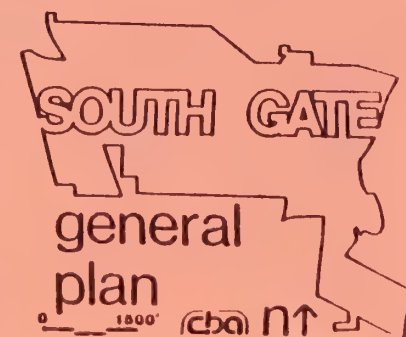
TABLE 24
LEVELS OF SERVICE

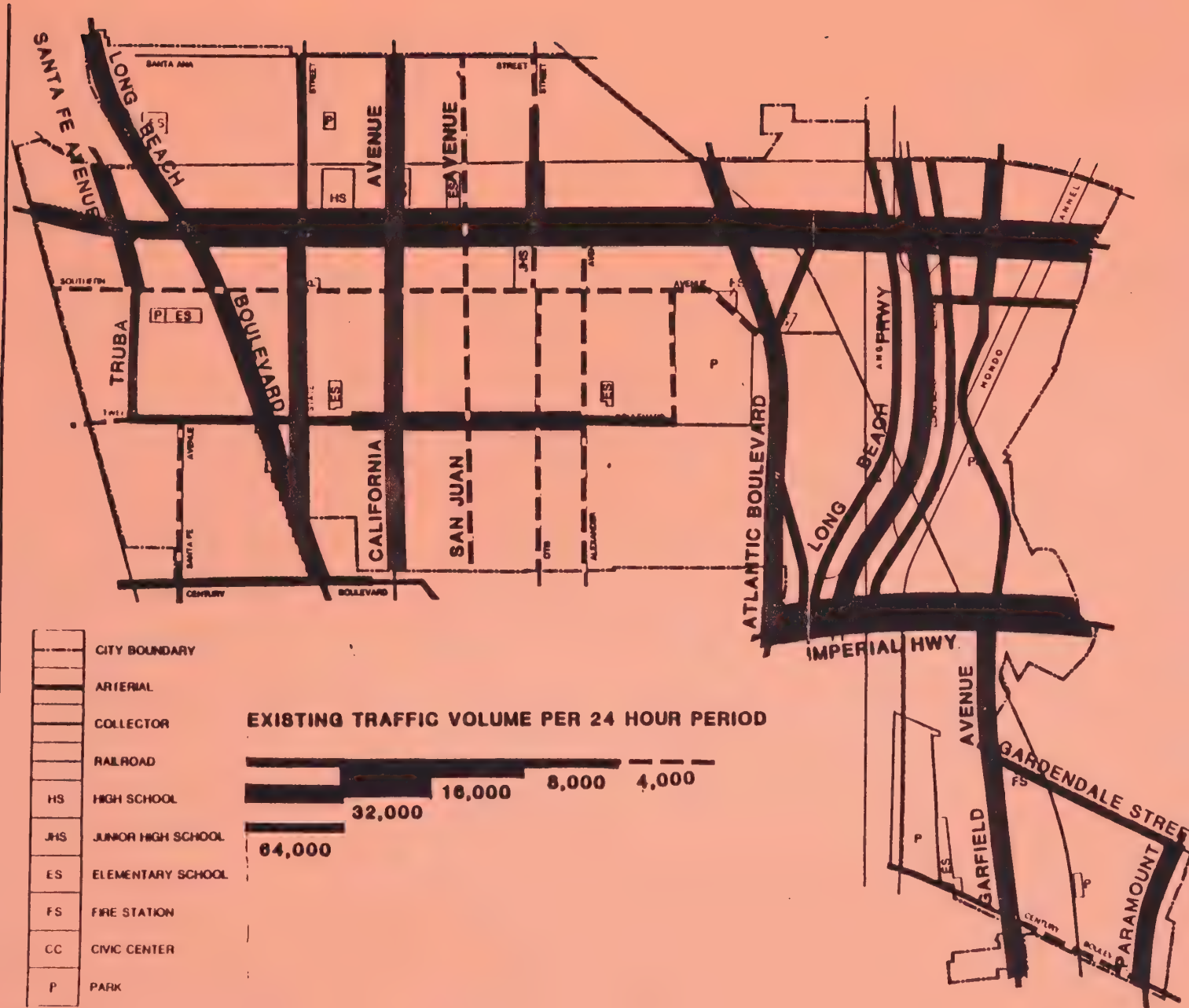


SOURCE: Monroy-Lopez Engineering

Figure 22

Existing Functional Classification

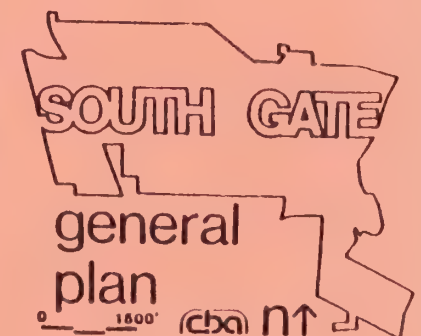




SOURCE: City of South Gate

Figure 23

Existing Traffic Volume



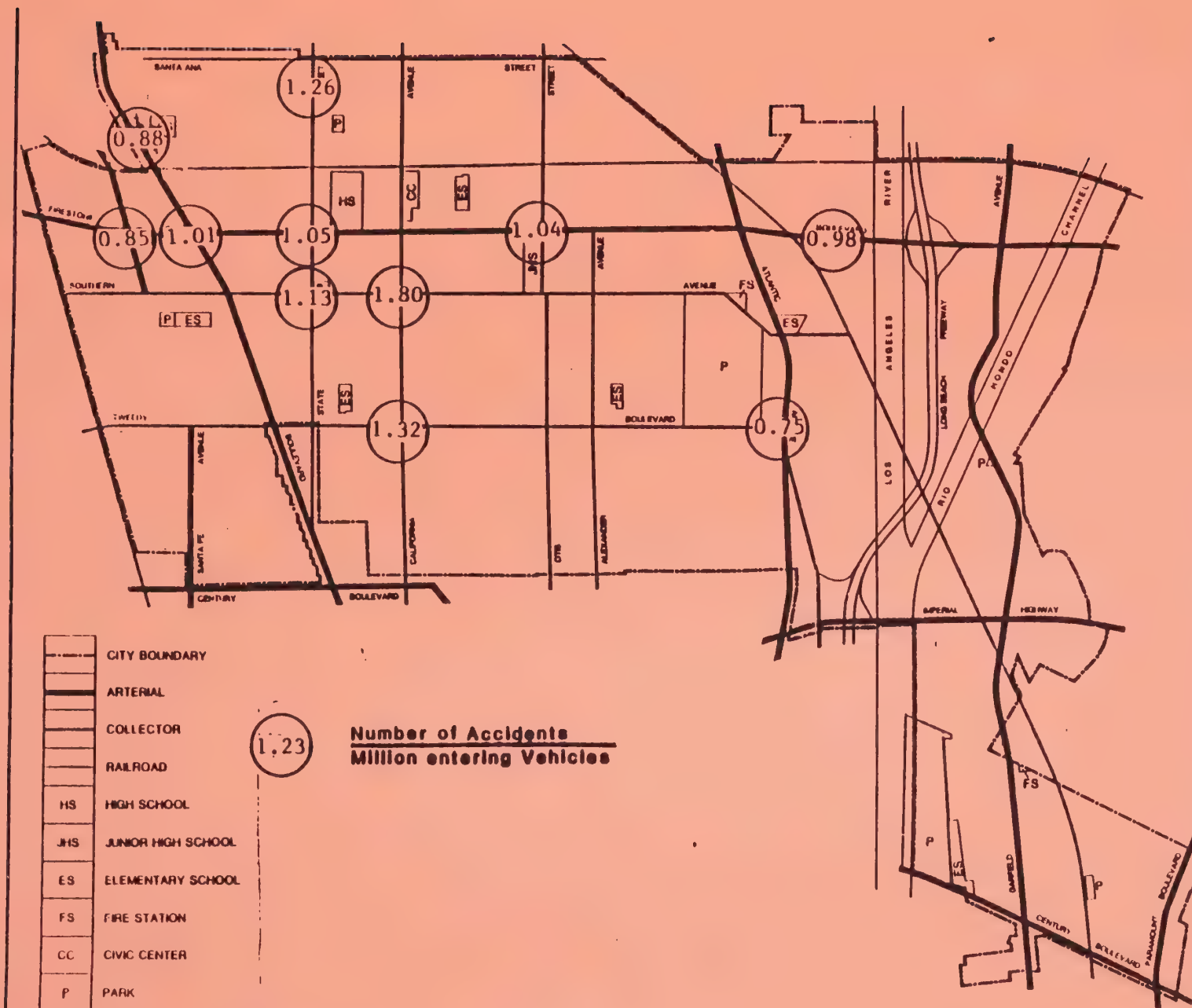
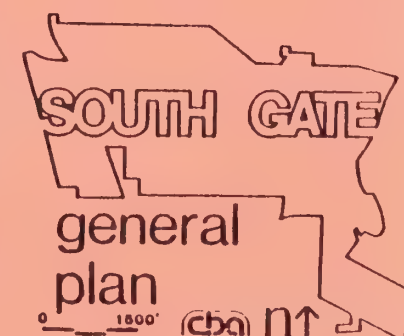


Figure 25
Existing
High Accident
Locations



Public Facilities & Infrastructure

V. PUBLIC FACILITIES AND INFRASTRUCTURE

A. Water

Two purveyors supply water to customers in the City of South Gate: the City-owned and operated water company and the privately-owned and operated Southern California Water Company. The service area for the Southern California Water Company includes the Hollydale section of the City between Gardendale Street and Century Boulevard. The rest of the City is served by the City-Water system.

The City is located above the Central Basin, a groundwater basin along the central portion of the Downey Plain. Water is found in strata with a thickness of approximately 1,400 feet. The water-bearing zones tapped by City wells include the Lynwood, Silverado and Sunnyside Aquifers.

Water is obtained from both local groundwater and imported sources. Nine wells with a combined capacity of 15,227 gallons per minute (gpm) provide local groundwater to the City while two MWD connections in Southern Avenue provide imported water. Storage is provided by four reservoirs with a combined capacity of 1.3 million gallons.

The water distribution system in South Gate consists of 124 miles of pipeline and 14,377 service connections. The City's water delivery system includes 107 miles of cast iron pipe that is over 50 years old which represents approximately 86 percent of the entire water pipeline system in the City. Those lines constructed with cast iron pipe may contribute to water quality problems due to deterioration of the lines and discoloration of the water. Approximately 10 percent of the pipeline system was constructed within the past 24 years.

The existing system is inadequate in meeting fire flow and maximum day demands. In addition, the westside is deficient in supply and storage capacity resulting in inadequate capacity for fire flow and emergency reserves. The Water Department estimates that existing water consumption within South Gate approaches that of a city of more than 85,000 persons and this level of consumption will increase significantly in coming years with the trend towards larger families with small children. The City's entire water system will be severely impacted if existing demographic trends continue.

There are two projects proposed to increase the supply and storage capacity of the City's existing water system. The Westside Water Supply Project calls for the construction of a 5.0 million gallon buried concrete reservoir located on the site of the General Motors plant. This project will also include the construction of a 7,500 gpm booster pump station, two 2500 gpm reservoir supply wells, and standby power for the entire facility. A second project is under construction in conjunction with the Project Delphi development. The project site is located west of the Firestone Boulevard offramp on the Long Beach Freeway. This site will contain two reservoirs with a combined capacity of 5.0 million gallons, two wells, and a booster pump station. The locations of both projects are shown in Figure 26.

B. Sewer

The operation and maintenance of the sewer system within South Gate is the responsibility of the City of South Gate Department of Public Works while treatment of effluent is the responsibility of the Los Angeles County Sanitation District. The effluent is treated at the County treatment facility in Carson.

South Gate's existing sewer system contains approximately 665,000 linear feet of line. The sewer system in the city was constructed more than 50 years ago and serious problems exist within some areas due to residue accumulations in the lines. In addition, the increasing population densities will create further problems in those areas of the City where the lines are nearing capacity. The City is in the preliminary stages of preparing a Sewer Needs Study that will determine the current conditions of the City's entire sewer system.

C. Parks and Recreation

The City of South Gate Department of Parks and Recreation is responsible for the maintenance of approximately 161 acres of park space and approximately 10 acres of other landscaped areas. There is a variety of recreation facilities including a large community center, complete with an auditorium and sports center, located in South Gate Recreation Park. A second community center is located in Hollydale Community Park. In addition, the Parks and Recreation Department maintains facilities for senior citizens, The Rod and Gun Club, The Girls Club, and The Boy Scouts. The locations, acreage, and facilities of the eight City parks are shown in Table 25.

South Gate Recreation Park and Hollydale Park are designed to serve a group of neighborhoods by offering a variety of recreational facilities so as to attract people with a wide range of interests and recreational needs. Parks of this type are generally referred to as district parks and range in size from 20 to 100 acres, have a service radius of one-half to three miles, and serve 10,000 to 50,000 people. Using the standards recommended by the NPRA, South Gate Recreation Park and Hollydale should serve approximately 39,000 and 23,000 persons respectively. Circle Park and Hollydale Community Park are designed to serve the recreational needs of a neighborhood. The NPRA recommends that parks of this type should range in size from 5 to 20 acres, serve a population of 2,000 to 10,000 persons and have a service area radius of one-quarter to one-half mile. The remaining four parks, all under one acre in area, are classified as tot lots and mini parks. There are no applicable standards for parks of this type though they are generally designed to serve the recreational needs of small children. The locations of the individual parks are shown in Figure 27 and their approximate service areas appear in Figure 28.

Since the residential areas of South Gate are so densely developed, there is very little private recreation space available, especially for active recreation. Residents must rely on public parks and recreation facilities. The areas with the highest population density are on the western side of town - well away from the City's two large parks. As a result, the western portion of town is not well served by existing facilities.

The National Recreation and Parks Association (NRPA) recommends a minimum of 2.5 acres of park space per 1,000 persons. Using this criteria, South Gate should have an additional 24 acres of park space to meet the minimum standards. The Southern California Association of Governments (SCAG) recommends a minimum of 4.0 acres of park space per 1,000 persons. Using this criteria, South Gate should have an additional 135 acres of park space.

TABLE 25: PARKS AND RECREATION FACILITIES

Park Location	Area	Facilities
1. South Gate Recreation Park 4900 Southern Avenue	96.8 acres	auditorium, sports center with swimming pool, athletic fields, golf course, playground
2. Hollydale Park 5400 Monroe Avenue	56.0 acres	playground
3. Circle Park 10129 Garfield Avenue	4.0 acres	playground
4. Hollydale Community Park	2.2 acres	community center, playground equipment
5. Southern Avenue Tot Lot State Street & Southern Ave.	0.8 acre	playground
6. Gardendale Mini Park 5480 Gardendale Street	0.45 acre	playground
7. Stanford Avenue Park 2715 Illinois	0.19 acre	playground
8. Post Street Mini Park Post Street & Victoria Ave.	0.12 acre	playground, tot lot
TOTAL	160.56 acres	

Source: Department of Parks and Recreation, City of South Gate

D. Educational Facilities

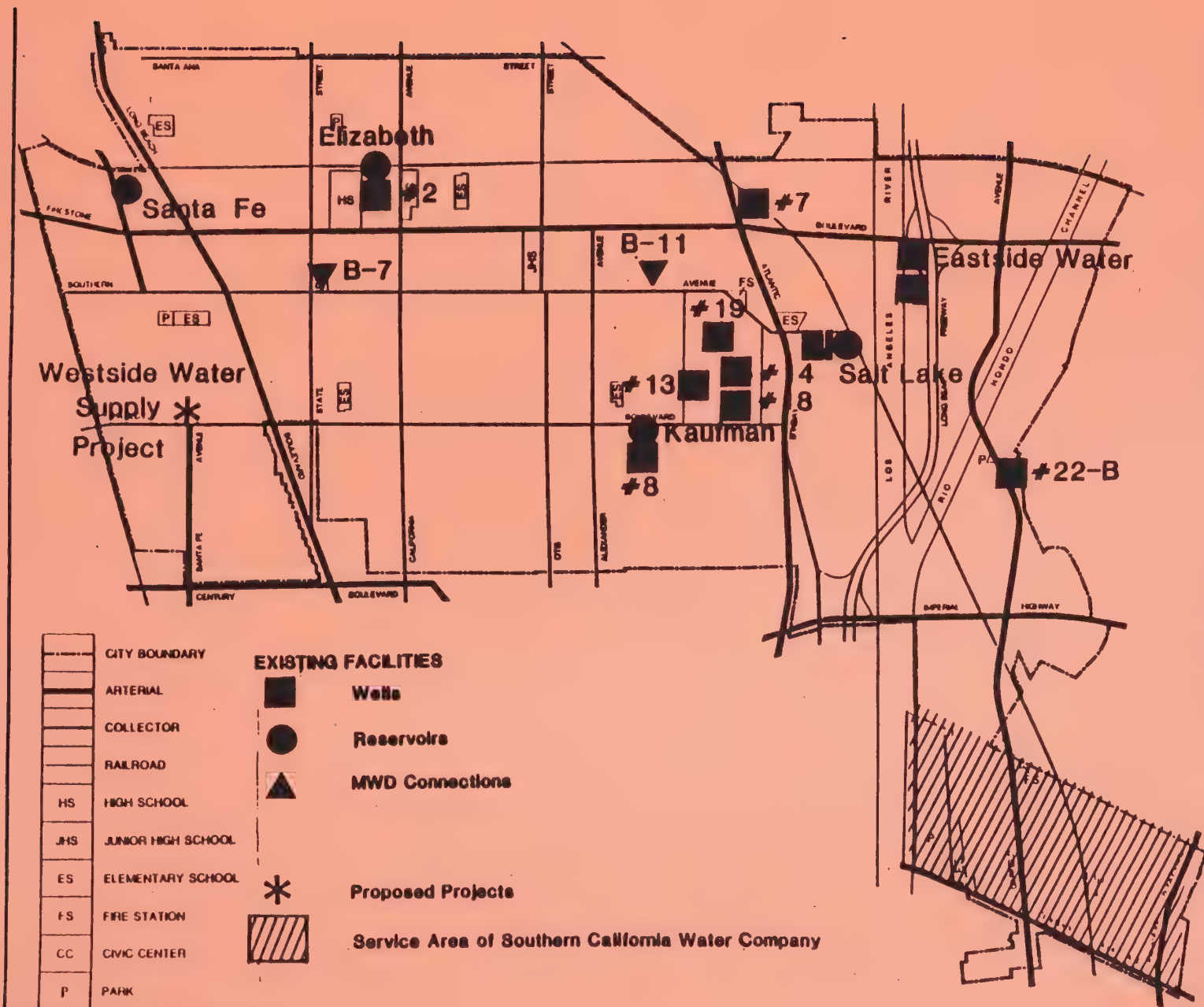
Residents within the City of South Gate are served by three school districts: Downey Unified School District, Los Angeles Unified School District, and the Paramount Unified School District. There are seven elementary schools, one junior high school, and one high school located within the incorporated boundaries of the City. With the exception of the Hollydale Elementary School, which is part of the Paramount School District, all of the public schools located within the the City are administered by the Los Angeles County Unified School District.

Due to the jurisdictions of the individual school districts, approximately 10 percent of the students living within South Gate attend schools located in neighboring cities. In addition, some of the schools located within South Gate have students coming from outside of the City. Those schools within the Los Angeles Unified School District are overcapacity; schools located within the Lynwood and Paramount Districts are at capacity; and schools within the Downey School District have capacity for additional students. All of the schools within the Los Angeles Unified School districts are operating on a four track year-round schedule. The characteristics of the 10 public schools located in the City are described in Table 26.

TABLE 26: PUBLIC SCHOOLS LOCATED WITHIN SOUTH GATE

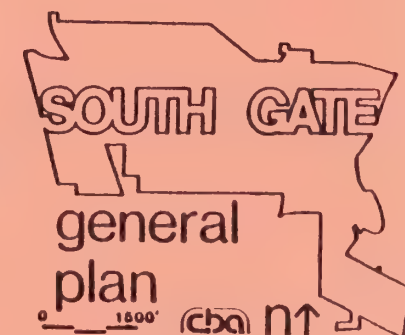
School	Address	District	Grade	Enrollment
Bryson Avenue Elementary	4470 Mission Ave.	L.A. Unified	K-5	1,161
Hollydale Elementary	5511 Century Blvd.	Paramount	K-5	912
Liberty Avenue Elementary	2728 Liberty Ave.	L.A. Unified	K-5	1,513
San Gabriel Avenue Elementary	8628 San Gabriel Ave.	L.A. Unified	K-5	997
Stanford Avenue Elementary	2833 Illinois Ave.	L.A. Unified	K-5	2,042
Tweedy Elementary	5115 Southern Ave.	L.A. Unified	K-5	556
Victoria Avenue Elementary	3320 Mission Ave.	L.A. Unified	K-5	1,740
South Gate Junior High	4100 Firestone Blvd.	L.A. Unified	6-8	3,518
South Gate High	3351 Firestone Blvd.	L.A. Unified	9-12	3,080
South Gate Community Adult School	3351 Firestone Blvd.	L.A. Unified	-	-

Sources: Downey School District
Los Angeles City Unified School District
Paramount School District
South Gate Department of Community Development



SOURCE: City of South Gate

Figure 26
Water



The demographic transition that is taking place in South Gate and the surrounding region is having a significant impact on the region's schools. School enrollment figures were obtained from 1960, 1970 and 1980 census data and are shown in Table 27. Between 1960 and 1980, South Gate's population increased 24.1 percent while the number of resident children enrolled in kindergarten through the twelfth grade increased 49.3 percent. Public school enrollment overall, increased 56.6 percent and enrollment in public schools in kindergarten through the eighth grade increased 73.8 percent. If current trends continue, elementary and intermediate schools will continue to experience severe overcrowding as the numbers of residents in this age group continue to increase. The high schools can also expect to be severely impacted as the age cohorts, currently enrolled in the lower grades enter high school in the latter 1980's and 1990's.

The rapid growth in the number of school-aged children may be attributed to the increasing numbers of large Hispanic families with children that are moving into the region. In addition, many adults in their late 20's and 30's that postponed having children until recently are now raising families. The implications of this trend include not only a continuation and aggravation of existing problems associated with overcrowding, but also a dramatic increase of the number of Spanish-speaking and low-income students.

TABLE 27: SCHOOL ENROLLMENTS: 1960-1980

	1960	1970	1980	CHANGE:1960-80	
				No.	%
Public					
Elementary (K-8)	5,508	6,129	9,573	4,065	+73.8
High School (9-12)	2,858	2,532	3,521	663	+23.1
Subtotal	8,366	8,661	13,094	4,728	+56.5
Private					
Elementary (K-8)	1,078	848	1,245	167	+15.5
High School (9-12)	335	324	255	80	-23.9
Subtotal	1,413	1,172	1,500	87	+ 6.2
Total Enrollment	9,779	9,833	14,594	4,819	+49.3
% of City Population	18.2%	17.3%	21.9%		

Source: U.S. Census: (1960, 1970, 1980)

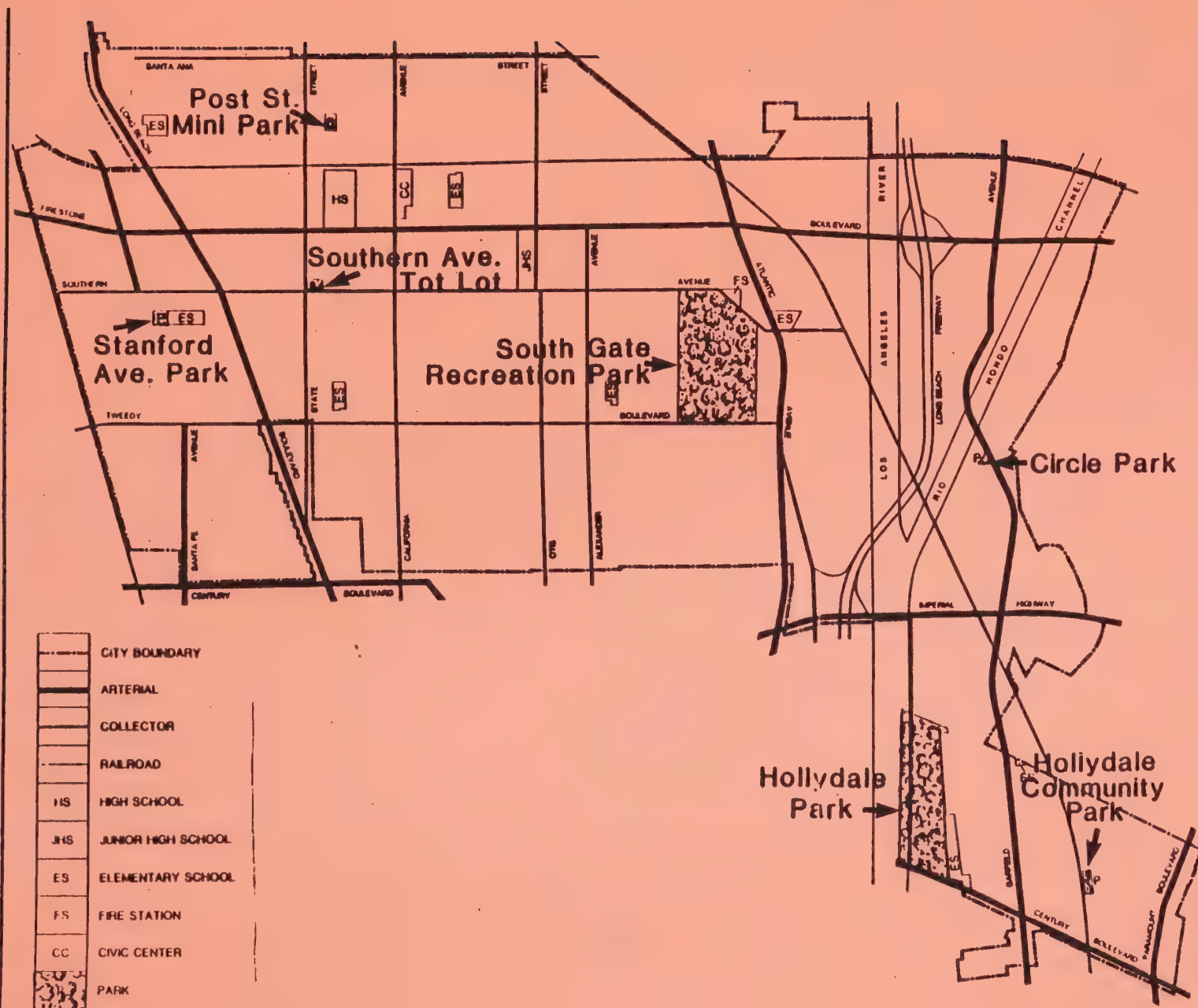


Figure 27
Parks



SOURCE: City of South Gate

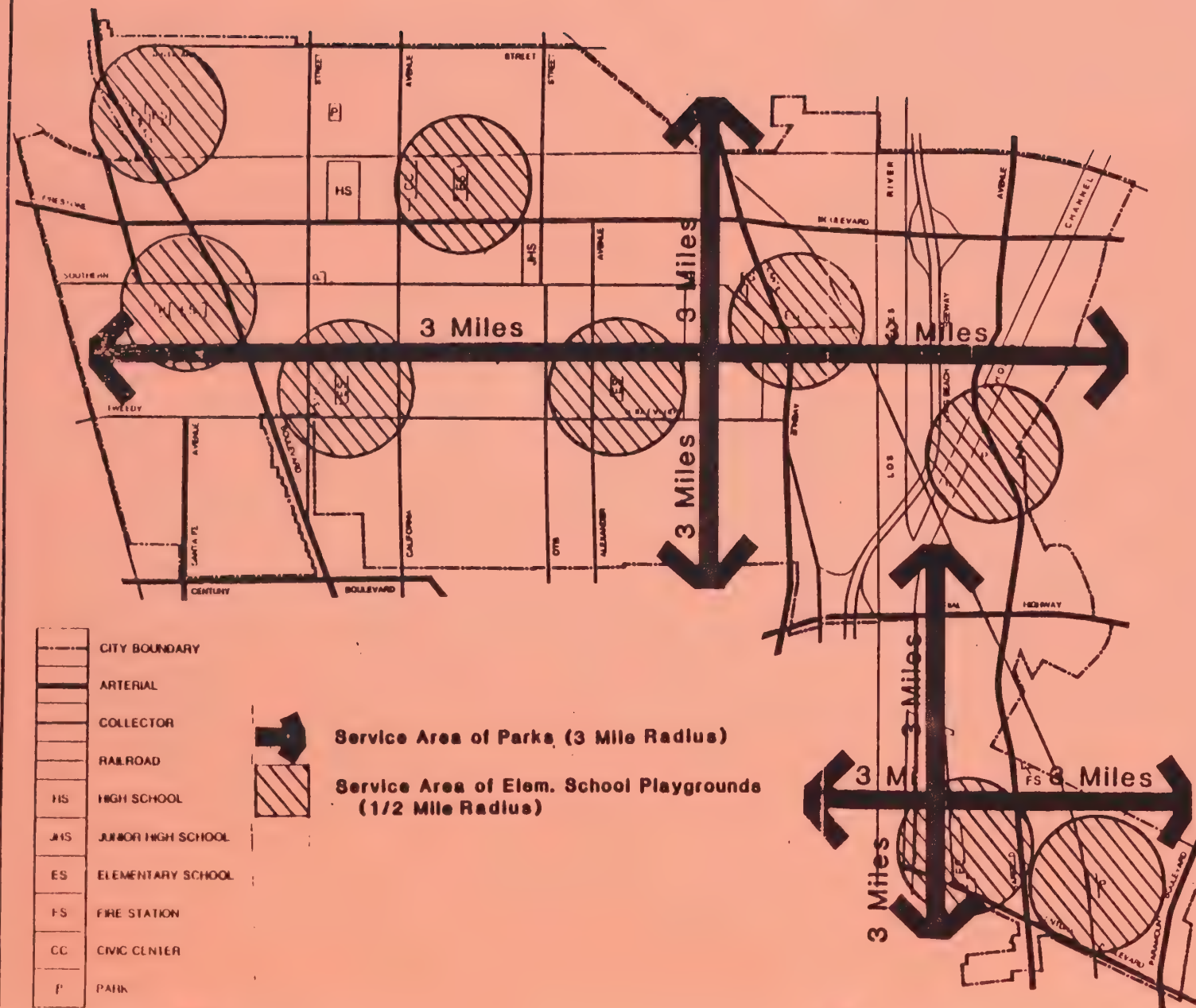
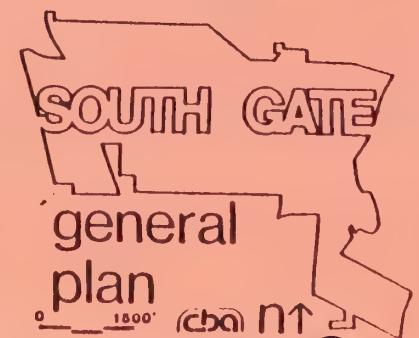


Figure 28 Park and Playground Service Areas



Health & Safety

VI. PUBLIC SAFETY

A. Police

Law enforcement for the City is provided by the South Gate Police Department which operates out of a facility located in the Civic Center complex. The police department staff has an authorized strength of 90 sworn officers, 34 non-sworn officers, and 17 reserve officers. The non-sworn personnel refer to administrative and support personnel such as dispatchers, jailers, record clerks, community service officers, etc. Many of these positions were once held by sworn officers though these duties were gradually delegated to non-sworn officers. In 1970, there were 92 sworn officers and 14 non-sworn officers which represents a slight decrease in the former while the number of non-sworn personnel increased by 143 percent. In addition, the ratio of sworn police personnel per 1,000 population decreased from 1.62 in 1971 to 1.19 in 1985. The Police Department currently has no automated information system and must rely on hand search for all information retrieval.

Crime rates are lower in South Gate when compared to the surrounding jurisdictions and criminal activities in these surrounding areas have created problems for law enforcement in South Gate. Crime-related activities originating in the public housing projects located in the unincorporated area just west of the City are spilling over into portions of South Gate. In addition, prostitution and other vice-related criminal activities occasionally spread into the City along Atlantic Boulevard and Long Beach Boulevard from the neighboring jurisdictions.

Many of the crimes committed in South Gate are alcohol-related and have a tendency to occur in those areas where bars and liquor stores are prevalent. South Gate is also home to several gangs though gang-related criminal activities within the City are minimal due to the vigorous efforts of the police department to control gang violence. The significant growth in the school-aged population has caused a major increase in crimes involving juveniles. The overcrowded schools began implementing year-round instruction to accommodate the growing numbers of students. Prior to the year-round track system, police and school officials could identify those students that were possible due to the variability in school schedules among the students. Many students are now out of school during daytime hours and there has been a considerable rise in the number of residential burglaries committed by juveniles. It was estimated by the police department that juveniles between 8 and 15 years of age are involved in over 50 percent of the burglaries in the City.

The number of Class I crimes reported within South Gate during the five year period beginning in 1980 is shown in Table 28. It appears that, overall, there has been a slight decline in the number of crimes of this type. There has also been a significant decline in the frequency of reported burglaries which may be attributed to crime prevention efforts of the South Gate Police Department.

TABLE 28: CLASS I CRIMES REPORTED IN SOUTH GATE - 1980-1984

CRIME	1980	1981	1982	1983	1984	1985
Homicide	8	9	6	8	5	3
Rape	29	43	30	37	26	20
Robbery	299	306	273	277	282	346
Assault	403	379	410	424	429	477
Burglary	1310	1306	1185	1152	1092	1183
Larceny	1469	1601	1564	1453	1494	1432
Auto Theft	543	595	589	566	577	665
Total Reported Crimes	4061	4239	4057	3917	3905	4192
TOTAL ARRESTS	7361	7773	7116	7565	7063	7499

Source: South Gate Police Department

The South Gate Police Department has recognized the socio-economic and demographic shifts that are taking place within the region and their implications relating to law enforcement within the City. The increasing numbers of juveniles and Spanish-speaking persons and the rise in unemployment and under-employment. will contribute to future law enforcement problems. The police department has initiated a crime prevention philosophy that consists of three major components:

- (1) An active crime prevention program that is establishing a City-wide neighborhood watch program with a stated goal of having a single block captain and two co-captains on each block. In addition, one crime prevention program includes the installation of deadbolt locks in homes of the elderly while another involves the installation of locks, smoke detectors, and fire extinguishers in low income households.
- (2) A public relations program that encourages citizen participation in law enforcement while at the same time, increases cooperation between the community and the police department. A program to teach Spanish to all police personnel, a citizen "ride-a-long" program, and other programs have been implemented to encourage increased cooperation between the community and the police department.
- (3) A vigorous effort to reduce crime through an increase in patrol and surveillance activities and a concerted effort on the part of the police department to enforce the existing laws and ordinances

B. Fire

The City of South Gate maintains a contractual agreement with the Los Angeles Fire Department to provide fire protection for the City. The Los Angeles County Fire Department maintains 3 fire stations in the City though their service areas are not limited to areas within South Gate. In addition, some portions of South Gate are served by County fire stations located in neighboring cities.

The County Fire Department provides paramedic services and sponsors numerous programs including fire prevention, water safety, and earthquake preparedness. The major fire hazards in the City concerns structural and chemical fires in the industrial areas of the City and smaller structural fires in homes and apartments. In addition, fires resulting from ruptured gas lines and structural damage may be considerable in the aftermath of a major earthquake. The current protection class rating for South Gate as classified by the Insurance Services Office is 3. This rating is in a scale of 1 to 10 with one being the highest possible rating.

C. Seismic Safety

South Gate is situated on a flood plain formed from recent alluvial deposits from the Los Angeles and San Gabriel Rivers. The local relief is generally level with elevations ranging from 135 feet in the northwest corner of the City to approximately 80 feet in the southwest corner.

No major faults are known to exist within the City of South Gate at this time. The City is located in a seismically active region as are all Southern California cities. Numerous active faults are located in the surrounding region including the Whittier-Elsinore fault system located approximately 10 miles northeast of the City, the Newport-Inglewood fault, 3 miles to the southwest, and the San Andreas fault system located approximately 40 miles to the northeast. The probability is high that the latter will generate an earthquake with a Richter magnitude in excess of 8.0 within the next 30 years. An earthquake of this intensity could be expected to cause considerable damage within South Gate and the surrounding region. Prior to 1939, most structures were not reinforced to withstand the effects of major earthquakes and these unreinforced structures located in the City have been identified. The locations of the major fault systems within the region are shown in Figure 29.

The degree of ground shaking associated with an earthquake varies according to the amplification characteristics of the subsurface soils. The portion of the City west of the Los Angeles River is underlain by a coarse, sandy layer known as the Gaspar Aquifer and is more susceptible to ground shaking than the areas where the aquifer is absent. In addition, the northeast section of the City has a high water table that increases the risk of liquefaction. The general location of the Gaspar Aquifer and the areas that may be subject to liquefaction are shown in Figure 30.

D. Flooding

The South Gate Department of Public Works maintains a network of storm drains within the City to alleviate localized flooding. In addition, the two river channels that traverse the City are concrete-lined and form part of a regional network of flood control improvements. These improvements have greatly reduced the probability of a major flood resulting from the overflow of the Los Angeles and Rio Hondo Rivers.

The Federal Emergency Management Agency (FEMA) rescinded an earlier flood area designation for the City. South Gate's new Zone C designation appeared in the FEMA "Region IX Flood Prone List" dated January 1, 1982. This Zone C designation indicates the absence of any serious flooding threat from nearby rivers.

The City's inland location and its distance from any large bodies of open water eliminate the threat of tsunamis and seiches resulting from an earthquake. No flooding resulting from dam or levee failure is anticipated because of the City's location in relation to the dams and reservoirs in the region.

Localized flooding may be a problem during periods of intense rainfall. This is especially true in low lying areas of the City where runoff is accelerated by the high runoff coefficient due to the amount of developed terrain.

E. Air Quality

South Gate has a semi-arid Mediterranean climate with varied winters and hot, dry summers. The average annual precipitation is 14.8 inches per year with most of the precipitation occurring from November to April. Temperatures range from a low of 40°F to a high of 110°F. The average daily temperatures range between 53.8°F and 73.3°F.

Regional patterns vary seasonally, with westerly winds predominant in the summer months and northeasterly winds in the winter months. Local weather is affected by winter storms moving along the Pacific Coast, warm tropical air masses, and hot, dry Santa Ana winds caused by high pressure systems in the Great Basin. The dominant daily wind pattern consists of a daytime sea breeze blowing inland from the ocean followed by a night-time land breeze blowing from the inland areas toward the coast.

Air pollutants are transported and dispersed by meteorological processes. Meteorological factors important to the transport of air pollution within the South Coast Air Basin are wind speed and direction and the presence of atmospheric temperature inversions. Wind conditions control both the local and regional trajectory of emissions. During the day the air coming into South Gate has often traversed numerous pollution source areas from the other heavily urbanized and industrial regions to the west.

The problem of a long transport distance over many pollution sources in summer is compounded by temperature inversions that exacerbate the pollution problem. In summer, the air within the high pressure center over the ocean sinks and warms. Near the ocean's surface, the air cools by contact with the cool water. This forms a shallow, well-mixed layer of marine air about 1,000 feet deep capped by a massive layer of warm air. Pollutants emitted near the ground remain trapped within that shallow layer. As each pollution source adds its contribution to that layer, the air arriving at the eastern portion of the Los Angeles metropolitan area can become highly polluted with visibility degrading aerosols and with unhealthful, invisible gaseous pollutants. This condition will continue and become more concentrated until either the inversion breaks or surface winds increase to disperse the pollutants horizontally.

Air pollution generators located in South Gate include the industrial activities located within the City and from the numerous cars and trucks operating on the City's roadways. In addition, air pollution generated by traffic and point sources in the immediate vicinity and in the region contribute to the overall decline in air quality within the City.

F. Hazardous Wastes

The Toxic Substance and Control Division of the California Department of Health Services identified the hazardous waste generators located in South Gate. Nine facilities produce in excess of 1000 kilograms (KG) per month and twenty generators produce less than 1000 KG per month. The major waste generators are generally concentrated in the industrial area between Olis Street and the Los Angeles River (see Figure 31). Two other major hazardous waste generators include the Firestone Tire Plant and the General Motors facility, neither of which are in operation at this time. Because of their distribution, there are some chances of an accident or spill on many of the major arterials in the City. In addition, efforts should continue to be directed toward preventing the illegal dumping of wastes into the storm drain system and elsewhere. Should these wastes enter the storm drain system and reach the Los Angeles or Rio Hondo River channels, the contamination could be regional in scope.

G. Noise

Noise intensity is discussed in terms of the Community Noise Equivalent Level (CNEL). This measure presents a weighted average noise level that increases the relative significance of evening and night-time noises. This measure recognizes that noises occurring during the evening and at night are less tolerable than noises occurring during the daytime. CNEL expresses a standard acoustical scale that includes both magnitude and frequency of occurrence. The accepted exterior noise standard for this scale is generally 65 dB CNEL.

In the City of South Gate, there are four principal sources of noise emissions which reach or exceed 65 dB CNEL:

1. Industrial operations - Considerable noise is generated from the various industrial facilities located within the City. Noise is generally restricted to the daytime hours of operation and most of the land uses of this type are located some distance from those land uses that are noise sensitive.
2. Railroad lines - Operations on the Southern Pacific and Union Pacific Railroad cause considerable noise. Many of these lines traverse residential neighborhoods and are located near noise sensitive land uses.
3. Vehicular traffic - Trucks are a primary source of traffic generated noise, although this source will be reduced somewhat in future years as the California Vehicle Code Standards are enforced and older trucks are replaced by new, quieter trucks. In addition, noise generated from traffic on the Long Beach Freeway is significant and will have an impact on residential areas located near it.
4. Construction noise - Noise generated by construction activities can be considerable though it is generally restricted to daytime hours and is



Figure 29
Regional
Geology



Economic Characteristics

VII. ECONOMIC CHARACTERISTICS

A. Existing Commercial and Industrial Activity

In 1980, an estimated 1,500 businesses were located in South Gate. Of this number, 325 (21.6 percent) were engaged in some form of manufacturing, 125 (8.3 percent) were involved in wholesale trade, 575 (38.3 percent) were service oriented activities, and 475 (31.7 percent) were retail activities. In general, the character of the commercial and industrial activities has not changed significantly since 1980. During this time, several major establishments, including General Motors and Firestone, have shut down production facilities in South Gate. These major establishments did not reflect the more general character of smaller sized establishments in the community.

The major demographic shifts within the region will have a measurable impact on future economic activity in the City. The large numbers of semi-skilled workers who now live in the City provide a labor force that is in direct contrast to the largely middle-class, unionized labor force that was predominant in past years. The existing labor force may serve as a catalyst in attracting labor intensive small and medium sized businesses.

Business activities in South Gate can capitalize on the changing demographics occurring in the City. Commercial activities, to be successful, will have to recognize the social and cultural norms of the new residents. The large numbers of young families with small children will be a sizable market for those retailers located in the City. In addition, the Hispanic residents have a tendency to shop local commercial and retail businesses and could benefit redevelopment attempts at revitalizing the downtown and other commercial areas in the City.

B. City and Agency Finances

City and agency finances were reviewed in terms of potential revenue sources for land use improvement. These improve property and sales taxes, with recent history as follows:

	<u>1981-82</u>	<u>1984-85</u>
City Property Tax	497,000	750,000
City Sales Tax	3,325,000	3,400,000
Agency Tax Increment	3,451,000	2,779,000

The principal revenue source to select future improvement activity is Agency tax increment. As indicated, this increment has actually declined since 1981-82, principally as a result of General Motors plant closure. However, significant additional tax increment can be created through development of major sites, as discussed earlier.

Since Proposition 13, user fees have been a growing portion of many cities' revenue. However, this has not been a major force in the City of South Gate. Further, such user fees do not appear to be a likely source for overall improvement activity. Various state subventions are also not to be relied

upon as they are heavily dependent upon state legislation. In this respect, motor vehicles in lieu of taxes have been very volatile in the last several years.

The City has been active in obtaining grant monies from Federal and State sources. The \$2.2 million UDAG for Hahn Industries is a particular case in point. In general, grants at the Federal level have been declining during recent years. On the other hand, evaluation of specific project opportunities at a later date can consider this source to the extent practical.

C. Development Opportunities

Fourteen major sites were identified by NLW as being suitable for conversion to more intensive uses. These potential uses would primarily involve industrial, large-scale office developments and commercial developments. These sites include the following:

General Motors. This is an 89-acre site in redevelopment location No. 4. It presently contains approximately one million square feet of older building space which could be demolished. Its best potential conversion is for approximately 1.67 million square feet of industrial space, although marketing may be thin for this amount. The Agency is presently evaluating project potentials. Preliminary indications are that Agency participation of \$4 million to \$6 million may be needed for demolition and other developer incentives. Preliminary estimates of cost are about \$20 million to \$25 million for land acquisition and up to \$14 million for demolition (although this latter figure seems extremely high to us). Major developer interest has been received by the Agency.

Delphi. This is a 40-acre site which has been extensively programmed by the Agency during the past three years. Present developer exclusive is held by Dicker/Warmington Properties. This is planned for a commercial and business park project. A first phase on 8-acres calls for 60,000 square feet of office, 5 restaurant pads, and a 150-room hotel. The Agency has full control of the site.

Auto Park. This is a 25-acre site on the south side of Southern. A new northbound off-ramp will provide direct entry, but southbound access will be via Firestone. The Agency is actively pursuing project planning. Interest has been expressed by several major auto dealers. It is anticipated that five to seven dealers will be attracted, with supplemental service facilities. Sales are preliminarily estimated at \$40 million per dealer annually. Additional site southward may be possible. The project is within Redevelopment Area No. 3

Firestone Shopping Center. This is a 14-acre site immediately east of the existing target discount store. It encompasses the existing Pete Ellis Dodge facility. An integrated center tied to the existing Target store appears a logical choice, which would probably contain upwards of 200,000 square feet of building space and resultant taxable sales generation of \$25 million or more. This project is in a preliminary planning stage.

- With the exception of several major closures, the City's business community has remained stable. The number of manufacturing and wholesale establishments is estimated today at 590 compared to 620 in 1970, with employment of 10,300 about equal to employment in 1970 after deducting about 5,000 for General Motors and Firestone plant closures. The number of retail establishments is estimated at 490, about the same as in 1970. The number of business and personal service establishments is estimated at 470 today, up 50 from 1970. In all, business employment today is estimated at 14,600, approximately equal to employment in 1970 after deduction of General Motors and Firestone. Taxable sales today, after adjusting for inflation, are at 1979 levels (earliest year analyzed).

Thus, the shift to Hispanic residency has not resulted in dramatic shifts in the business community. Further, this shift is common to the surrounding market area and much of the region. In our judgment, it will not inhibit economic development.

3. Favorable Market Trends Versus Constraints: A significant favorable market factor bearing on South Gate's economic development potential is the continuing acceptance of industrial facilities in the market area - essentially the East Central Area. While many larger establishments have moved out, we estimate that the surrounding 12-city area is realizing industrial development averaging 2.2 million square feet per year, requiring conversion of over 100 acres of land per year. In addition, a growing trend towards major regional-advertiser highway retail could be of benefit to South Gate, particularly along its Firestone Boulevard frontage. Also, we view recent success in attracting new retailers, including a food park complex to Tweedy Boulevard, as evidence of growing acceptance of South Gate as a retail location.

Major Commercial market constraints involve:

- The lack of readily available sites, accounted for in part by shallow-lot configurations on major arterials;
- Visual blight along much of the City's commercial frontage and portions of its industrial areas.

In our judgment, these are constraints which can be overcome through adjustment of land use designations, revised development standards, proper site assembly and other implementation measures.

4. Substantial Financial Resources: Principal financial resources which will be available for City economic development assistance will be:

- Existing redevelopment tax increments, currently running at a level of \$2.8 million annually;
- Future tax increments if major site development opportunities are realized of another \$3 million per year or more;

- Sales tax generated by new major projects such as a prospective auto center;
- UDAG and other assistance grants, which at the moment are being cut back by the federal and state governments and have an uncertain future.

Existing tax increments have total supportable debt capacity of over \$14 million. The potential use of these funds is a matter for review during Phase II of the consultant team's work, and will be based on a recent evaluation prepared by City staff.

5. Preliminary General Plan Considerations: Based upon Phase I analysis, we suggest consideration of the following land use alternatives:

- Establishment of another redevelopment project in the largely industrial area north of Firestone between Atlantic and Otis;
- Re-zoning of selected commercial arterials to permit deeper site commercial development;
- Encouragement of multiple family residential in selected locations as a replacement for older, "lower-end" commercial strip development on some major streets;
- Residential downzoning from multiple to single-family in stable neighborhoods to encourage continued high degree of homeownership in the City.

The redevelopment and downzoning recommendations were contained in our 1980 report. The downzoning recommendation was contained in an earlier report prepared by our principals in the 1960's. The key to justifying such downzoning will be subsequent estimates that property values remain as high or higher under single-family alternative use.

C. Development Site Opportunities

1. Major Sites: Tentatively, we have identified 12 major sites containing approximately 275-acres which appear suitable to conversion to higher use, principally industrial and commercial. These sites, whose locations are shown in Figure 32, are as follows:

- General Motors. This is an 89-acre site in Redevelopment Location #4. It presently contains approximately 1.7 million square feet of older building space which could be demolished. Its best potential conversion is for approximately 1.8 million square feet of industrial space, although this is a lot for the market area to absorb at present. The agency is evaluating project potentials. Preliminary estimates of cost are about \$20 million to \$25 million for land acquisition and up to \$14 million for demolition (although this latter figure seems extremely high). Major developer interest has been received by the Agency.

- Delphi. This is a 40-acre site which has been extensively programmed by the Agency during the past three years. It is in Redevelopment Location #3. At present, an exclusive right to negotiate is held by Dicker/Warmington Properties. The site is planned for a commercial and business park project. A first phase on 8 acres calls for 60,000 square feet of office, 5 restaurant pads, and a 150-room hotel. The Agency has full control of the site.
- Auto Park. This is a 25-acre site on the south side of Southern. A new northbound off-ramp will provide direct entry, but southbound access will be via Firestone Boulevard. The Agency is actively pursuing project planning. Interest has been expressed by several major auto dealers. It is anticipated that five to seven dealers will be attracted with supplemental service facilities. Taxable sales generation is preliminarily estimated at \$40 million per dealer annually. Additional site expansion southward maybe possible. The project is within Redevelopment Location #3.
- Thunderbird. This is a 7-acre site in Redevelopment Location #3 immediately south of Firestone Boulevard, but accessible only via Garfield. The Agency has been working for several years on a possible residential project, and at present is evaluating other development possibilities. These include industrial use and a mini-storage facility.
- Rod and Gun Club. This is a 5-acre site at the confluence of the Los Angeles and Rio Hondo Rivers. It is in Redevelopment Location #3, but no Agency action is currently being taken.
- Drive-In/ICX/Triangle. This is a 22-acre site at Firestone and Rayo in Redevelopment Location #2. It has been studied on a preliminary basis during the past several years by the Agency. It offers industrial and business park potential in particular. No action is currently underway.
- Armstrong Cork. This is a 6-acre vacant parcel immediately north of ICX in Redevelopment Location #2, but with poor access. Access would have to be through a Rayo underpass connecting it to Firestone or a new road on the north side of the railroad at Patata. Armstrong Cork is not currently interested in development. Access costs would be high. However, consideration should be given to long-term industrial development.
- Smiser Freight. This is an approximate 10-acre site, currently utilized for trucking activity. It is within Redevelopment Location #2. While no action is currently underway, this site appears to be suitable for long-term industrial or business park conversion.
- Ameron Pipe. This is a 39-acre industrial facility with extensive open storage. The site is located at the northwest corner of Firestone and Atlantic. It would appear to have good long term potentials for a combination of commercial, business park, and industrial development. No planning activity is presently underway for this site, other than opposing the prison. It is not within an existing redevelopment location.

- U.S. Gypsum. This is an 8-acre closed gypsum plant, not within a redevelopment location. It is immediately north of Ameron Pipe. It has long-term industrial development potentials, which would involve demolition of existing out-of-date facilities.
- Otis Truck Terminal. This is an approximate 5-acre existing truck facility at the northeast corner of Otis and Independence, also outside redevelopment. No action is currently underway on this site, but it appears to have long-term industrial conversion potential.
- Bernard Epps. This is another long-term situation not in redevelopment. The site is approximately 5-acre size.

These sites are recommended for site-specific consideration in subsequent planning activities. The above list is not intended to be all inclusive, and may be either expanded or reduced in the future. Nine of the 12 sites are already within redevelopment locations, and development of three areas is currently being actively pursued by the Agency. These are the Delphi, Auto Park, Thunderbird, and General Motors sites.

These sites strongly suggest that the greatest opportunities for future industrial and related business park development are in the following areas:

- The triangle formed by the Los Angeles and Rio Hondo Rivers;
- The area north of Firestone between Atlantic and the Los Angeles River;
- The area north of Firestone between Atlantic and Otis;
- The General Motors facility.

Full development of the approximate 275 acres could result in new building space in the range of 4 million to 6 million square feet, which in turn could generate new development values in the range of \$300 million to \$500 million, in turn generating tax increments in the range of \$3.0 million to \$5.0 million.

2. Commercial Arterials: Agency redevelopment activity is currently underway on three major arterials in the City:

- Tweedy Boulevard. Phase I of a street improvement program is nearing completion, covering a nine-block area between Virginia Avenue and Mallison Avenue. Agency investment in Phase I is approximately \$4.0 million. A \$1.7 million Phase II expansion (three blocks) will be undertaken this year. Major new development activity has been achieved on two sites. The first is an approximate 2-acre "food park" which will include three restaurants (IHOP, Burger King, and El Pollo Loco) and a 7,500 square foot combination office/retail building. Projected sales for the three restaurants are \$600,000 to \$1.0 million annually each. A second project is a shopping center anchored by the existing Sav-On Drugstore to contain a major retail use of approximately 20,000 square feet and 15,000 square feet of tenant retail. Both projects have involved Agency acquisition action, to obtain residential lots to the south, utilizing eminent domain as necessary.

- Hollydale. In conjunction with Tweedy Boulevard, street improvements are also being completed on Garfield in the Hollydale Business District, involving \$1.8 million Agency expenditures. No more such action is programmed. However, a mini-center is underway on a 16,500 square foot site to include a 7-11 and other retailers (total building space of 6,000 square feet).
- Long Beach Boulevard. Principal action here was creation of the 8-acre Santa Ana Seville shopping center, anchored by Alpha Beta and Sav On. This action has resulted in upgraded interest along Long Beach Boulevard, north of Firestone. Current activity is a 1-acre mini-center between Palm and Pine to contain 16,500 square feet of retail.

There are several other major arterials warranting special planning consideration because:

- Firestone Boulevard, largely a highway commercial strip, somewhat negatively influenced by heavy traffic;
- Atlantic Boulevard, currently a relatively low intensity strip commercial area;
- Otis Avenue between Tweedy and Firestone;
- California Avenue between Tweedy and Firestone;
- California Avenue north of Firestone to the City limits.

In common with many older highway commercial areas, they have small parcels with shallow site depths not able to accomodate commercial development, to current development standards (setbacks, parking, etc.).

3. Land Values: Several land value indicators are provided by recent Agency action:

- Resale of Food Park site on Tweedy Boulevard to developer at \$9.41 per square foot;
- Sale of the mini-center site along Long Beach Boulevard to developer at \$10 per square foot;
- Overall indications of industrial value on the eastern side of the City and also General Motors in the range of \$5 to \$6 per square foot.

These values are subject to refinement relative to use in evaluating specific site situations.

D. Demographic Factors

1. Analytical Areas: In this analysis, we have utilized demographic data covering the following defined areas:

- Two Market Areas. 2.5 and 5-mile rings drawn from the intersection of Otis Avenue and Tweedy Boulevard, per Figure 2.
- City of South Gate. The total City and also ten individual census tracts therein.
- Region. Los Angeles County and the 5-county region (Los Angeles, Orange, Ventura, San Bernardino, and Riverside Counties).

In addition, in utilizing SCAG projections we have used their defined RSA 21 covering the East Central Area, which is somewhat larger than the 5-mile ring.

2. Education: Educational levels of South Gate residents compare favorably with those of the region in terms of median school years and high school education - 11.7 percent median school years in both cases and 30.8 percent high school only versus 31.3 percent. The principal educational difference is a much lower percentage of residents having any college training - 17.3 percent versus 40.6 percent.

3. Employment: Consistent with income and educational findings, the City's level of white collar workers is well below regional levels - 38.6 percent versus 57.5 percent. In particular, professional/technical/managerial/proprietor employment is low - 12.0 percent versus 28.1 percent. By industry, South Gate is particularly heavy in the manufacturing and wholesale categories (reflecting nearby employment opportunity). By occupation, South Gate residents are particularly heavy in industrial, transportation, and laborer categories (see Table 29).

4. Market Demand Measures: Utilizing population counts for South Gate, the market areas, and the surrounding cities, we have prepared estimates of purchasing power (by detailed retail category) and local office demand, utilizing regional demand factors adjusted for income differentials. Total South Gate resident retail purchasing power is estimated at approximately \$272 million annually. Total local office demand is estimated at 354,000 square feet. (See Tables 30 and 31.)

E. Taxable Sales Comparisons

This section describes prototypical taxable sales generation for retail categories and will be used to help the City evaluate various commercial development options.

Information presented in this section has been drawn from the following sources:

- Detailed 1973 shopping center results for a wide variety of retail types, published by the Urban Land Institute;
- Prototypical taxable sales per square foot factors from the Natelson, Levander, Whitney files, developed during the past several years through realtor/developer interviews, retail chain interviews, actual historic experience from City clients, aforementioned ULI, etc.;

TABLE 29: 1980 Employment Characteristics In The South Gate Region

	South Gate	12-City Total	Los Angeles County	5-County Region		South Gate	12-City Total	Los Angeles County	5-County Region
OCCUPATION (%)					INDEX TO 5-COUNTY REGION.....				
OCCUPATION (%)					OCCUPATION				
Professional	3.7	5.3	12.8	12.8	Professional	28.9	41.4	100.0	100.0
Technician	1.7	1.9	3.1	3.1	Technician	54.8	61.3	100.0	100.0
Exec/Manager	6.7	6.7	11.8	12.2	Exec/Manager	54.9	54.9	96.7	100.0
Clerical	18.9	18.6	19.7	18.8	Clerical	100.0	98.9	104.8	100.0
Sales	7.6	7.8	10.0	10.6	Sales	71.7	66.0	94.3	100.0
Total White Collar	38.6	39.3	57.4	57.5	Total White Collar	67.1	68.7	99.8	100.0
Precision Prod Crafts	16.3	15.3	12.2	12.7	Precision Prod Crafts	128.3	120.5	96.1	100.0
Machine Operator	22.9	20.6	9.8	8.8	Machine Operator	260.2	234.1	111.4	100.0
Transport/Moving	5.4	5.8	3.5	3.5	Transport/Moving	154.3	165.7	100.0	100.0
Pvt Household Svc	0.4	0.4	0.8	0.6	Pvt Household Svc	66.7	66.7	133.3	100.0
Protective Service	1.1	1.1	1.3	1.4	Protective Service	78.6	78.6	92.9	100.0
Other Service	9.0	9.7	9.8	9.9	Other Service	90.9	98.0	99.0	100.0
Laborer	5.9	6.7	4.1	4.0	Laborer	147.5	167.5	102.5	100.0
Farm Worker	0.4	0.9	1.1	1.6	Farm Worker	25.0	56.3	68.1	100.0
Total Blue Collar	61.4	60.5	42.6	42.5	Total Blue Collar	144.8	142.4	100.2	100.0
Grand Total	100.0	100.0	100.0	100.0	Grand Total	100.0	100.0	100.0	100.0
INDUSTRY					INDUSTRY				
Construction	4.1	4.4	4.5	5.3	Construction	77.4	83.0	84.9	100.0
Manufacturing	43.0	39.8	25.3	24.2	Manufacturing	177.7	164.5	104.5	100.0
Transportation/Common	6.5	7.1	7.2	6.9	Transportation	94.2	102.9	104.3	100.0
Wholesale	6.4	6.0	4.8	4.6	Wholesale	139.1	120.4	104.3	100.0
Retail	14.4	13.1	15.4	16.1	Retail	89.4	81.4	95.7	100.0
Fin/Insur/Real Estate	4.4	4.0	7.2	7.1	Fin/Insur/Real Estate	62.0	54.3	101.4	100.0
Bus/Per Services	7.3	7.9	11.5	10.8	Bus/Per Services	67.6	73.1	106.5	100.0
Health/Educ/Other Serv	10.7	13.6	19.3	19.1	Health/Educ/Other Serv	56.0	71.2	101.0	100.0
Public Admin	2.5	3.1	3.5	3.9	Public Admin	84.1	79.5	89.7	100.0
Agriculture/Fish/Min	0.7	1.0	1.3	2.0	Agriculture	35.0	58.0	63.0	100.0
Total	100.0	100.0	100.0	100.0	Total	100.0	100.0	100.0	100.0
EMPLOYMENT TYPE					EMPLOYMENT TYPE				
Private Wage/Salary	86.9	83.1	79.2	78.6	Private Wage/Salary	110.6	105.7	100.8	100.0
Self-Employed	3.7	3.9	6.8	7.0	Self-Employed	32.9	35.7	97.1	100.0
Federal Govt	1.0	2.6	2.6	2.7	Federal Govt	66.7	96.3	96.3	100.0
State Govt	1	1.7	2.4	2.6	State Govt	38.5	65.4	92.3	100.0
Local Govt	6.4	8.4	8.6	8.7	Local Govt	73.6	96.6	98.9	100.0
Unpaid Family	0.2	0.3	0.4	0.4	Unpaid Family	50.0	75.0	100.0	100.0
Total	100.0	100.0	100.0	100.0	Total	100.0	100.0	100.0	100.0

TABLE 30: 1985 Consumer Purchasing Power In The South Gate Region

			12-City Area														Los Angeles County	3-County Region
	2.5-Mile Ring	3-Mile Ring	South Gate	Bell	Gardens	Commerce	Compton	Cudahy	Downey	Huntington Park	Lynwood	Maywood	Paramount	Vernon	12-City Total			
PURCHASES PER CAPITA																		
Apparel	150	152	180	150	114	143	136	111	291	129	145	165	163	121	173	252	253	
General Merchandise	379	386	456	399	288	362	346	281	736	326	367	418	414	386	437	638	646	
Drug	87	89	105	92	66	83	80	65	169	75	84	96	95	70	101	147	149	
Food	840	856	1,011	806	639	803	767	624	1,633	722	814	926	918	678	970	1,415	1,432	
Liquor	51	52	62	54	39	49	47	38	100	44	50	57	56	41	59	86	87	
Eating & Drinking	369	376	444	389	280	352	337	274	717	317	357	406	403	298	426	621	629	
Home Furnish & Appl	129	132	155	136	98	124	118	96	251	111	125	142	141	104	149	210	220	
Building & Farm	192	196	231	202	146	183	175	143	373	165	186	212	210	155	222	323	327	
Automotive	534	544	642	562	406	510	487	396	1,037	458	517	588	583	431	616	899	909	
Service Station	319	323	384	337	243	305	291	237	621	274	309	352	349	258	369	538	544	
Other Retail	331	337	398	349	251	316	302	246	643	284	320	364	361	267	382	557	564	
Total	3,381	3,445	4,066	3,564	2,570	3,230	3,005	2,510	6,571	2,905	3,274	3,725	3,695	2,738	3,983	5,695	5,762	
PURCHASES (\$ 000's)																		
Apparel	31,199	104,205	12,028	4,053	3,839	1,478	10,041	1,986	24,933	5,954	6,638	3,552	5,979	7	81,175	1,966,829	3,145,432	
General Merchandise	79,055	264,046	30,479	10,270	9,728	3,744	27,469	5,033	63,179	15,086	16,819	9,000	15,150	19	285,689	4,983,744	7,970,204	
Drug	18,177	60,713	7,008	2,361	2,237	861	6,316	1,157	14,527	3,469	3,867	2,869	3,483	4	47,295	1,145,928	1,832,614	
Food	175,297	585,493	67,503	22,773	21,572	8,303	60,909	11,161	140,092	33,452	37,295	19,956	33,593	41	456,094	11,058,911	17,673,061	
Liquor	10,700	35,765	4,120	1,391	1,318	507	3,721	682	8,558	2,843	2,278	1,819	2,052	3	27,861	675,056	1,079,576	
Eating & Drinking	76,940	256,901	29,663	9,995	9,468	3,644	26,734	4,899	61,488	14,683	16,369	8,759	14,744	10	280,186	4,850,400	7,756,954	
Home Furnish & Appl	26,969	90,076	10,397	3,584	3,319	1,277	9,371	1,717	21,553	5,147	5,738	3,070	5,168	6	70,168	1,700,140	2,718,932	
Building & Farm	40,056	133,789	15,443	5,204	4,929	1,897	13,918	2,550	32,012	7,644	8,522	4,560	7,676	9	104,221	2,525,208	4,038,414	
Automotive	111,312	371,703	42,915	14,461	13,690	5,272	38,677	7,087	88,958	21,242	23,682	12,672	21,331	26	289,616	7,017,245	11,222,260	
Service Station	66,629	222,540	25,608	8,656	8,199	3,156	23,151	4,242	53,246	12,715	14,176	7,585	12,768	16	173,357	4,200,346	6,717,363	
Other Retail	69,000	230,400	26,605	8,965	8,492	3,269	23,978	4,394	55,149	13,169	14,682	7,856	13,824	16	179,548	4,350,359	6,957,268	
Total	705,350	2,355,879	271,937	91,633	86,800	33,409	245,004	44,908	563,697	134,604	150,867	80,299	135,169	166	1,835,210	44,466,167	71,112,073	
HABITABLE BUILDING SPACE (000's SF)																		
Apparel	250	834	96	32	31	12	87	16	199	48	53	28	48	0	649	15,735	25,163	
General Merchandise	632	2,112	244	82	78	30	220	40	505	121	135	72	121	0	1,646	39,070	63,762	
Drug	104	347	40	13	13	5	36	7	83	20	22	12	20	0	270	6,548	10,472	
Food	438	1,464	169	57	54	21	152	28	350	84	93	50	84	0	1,140	27,627	44,183	
Liquor	71	238	28	9	9	3	25	5	57	14	15	8	14	0	186	4,500	7,157	
Eating & Drinking	280	934	108	36	34	13	97	18	224	53	60	32	54	0	728	17,638	28,287	
Home Furnish & Appl	245	819	95	32	30	12	85	16	196	47	52	28	47	0	638	15,456	24,714	
Building & Farm	364	1,216	140	47	45	17	127	23	291	69	77	41	70	0	947	22,956	36,713	
Automotive	223	744	86	29	27	11	77	14	178	42	47	25	43	0	579	14,034	22,445	
Service Station	67	223	26	9	8	3	23	4	53	13	14	8	13	0	173	4,200	6,717	
Other Retail	552	1,844	213	72	68	26	192	35	441	105	117	63	106	0	1,436	34,803	55,658	
Total	3,226	10,775	1,244	419	397	153	1,121	205	2,578	616	686	367	610	1	8,373	203,738	325,235	

Source: Interstate Commerce, Monterey.

Note: Data based on regional sales and income relationships.

TABLE 31: 1985 Local Commercial Office Demand In The South Gate Region

	2.5-Mile Ring	5-Mile Ring	12-City Area												12-City Total	Los Angeles County	3-County Region
			South Gate	Bell	Bell Bardens	Commerce	Compton	Cudahy	Downey	Huntington Park	Lynwood	Maywood	Paramount	Vernon			
PER CAPITA BUILDING SPACE (SF)																	
General Office	1.76	1.79	2.12	1.86	1.34	1.68	1.61	1.31	3.42	1.51	1.78	1.94	1.92	1.42	2.83	2.97	3.08
Financial Office	1.17	1.20	1.41	1.24	0.89	1.12	1.07	0.87	2.28	1.01	1.14	1.29	1.28	0.95	1.35	1.98	2.08
Medical Office	1.47	1.49	1.76	1.55	1.12	1.40	1.34	1.09	2.85	1.26	1.42	1.62	1.60	1.18	1.69	2.47	2.58
Total	4.40	4.48	5.29	4.64	3.35	4.20	4.02	3.27	8.55	3.78	4.26	4.85	4.81	3.55	5.88	7.41	7.76
BUILDING SPACE (000's SF)																	
General Office	367	1,227	142	48	45	17	128	23	293	78	78	42	78	0	955	23,158	37,823
Financial Office	245	818	94	32	30	12	85	16	196	47	52	28	47	0	637	15,433	24,682
Medical Office	306	1,022	118	40	38	14	106	19	245	58	65	35	89	0	796	19,292	38,822
Total	918	3,066	354	119	113	43	319	58	734	173	195	105	176	0	2,389	57,875	92,556

Source: Nelson/Levinson/Whitney.

Note: Data based on regional demand and income relationships

- Prototypical parking space and development density factors, from field measurements and extensive work with architects and planners in programming specific sites;
- Several additional realtor interviews from the specific purpose of assisting in this analysis.

Figure 33 presents taxable sales information on a per acre basis. Retail development can be expected to generate from \$2.0 million to \$3.3 million per acre of annual taxable sales. Underlying these estimates are square foot projections in the range of \$150 to \$325 per square foot. In the case of a supermarket, the \$150 factor is net taxable, based upon approximately one-third gross sales of \$450 per square foot. Similarly, superdrug taxable sales are predicted on 80 percent gross. For other types of outlets, taxable sales are to assumed equal gross.

Taxable sales factors utilized reflect the high end of the performance spectrum. In utilizing ULI data, as an example, it is assumed that sales performance of new outlets could be in the top 10 percent to 25 percent of the indicated performance range. This level of performance appears reasonable in relation to checks of specific stores.

Two major conclusions are drawn from Figure 33 and Table 34:

- High-end highway retail facilities can be top retail sales producers often exceeding more typical shopping center and eating and drinking facilities.
- Eating and drinking facilities are about mid-range in taxable sales generation, largely because of their very high parking requirement and resultant low-intensity development -- less than half the square footage of highway commercial on a per acre basis.

However, wide variations in performance and development densities are found among all retail categories. While not precise, these estimates do indicate that shopping center and food operations are not necessarily superior to highway outlets in sales generation.

It is recommended that the City adopt the following procedure to evaluate specific retail development proposals:

- Obtain projections for each facility from the developers and/or their principal tenants;
- Check these projections for reasonableness. How close are they to the high end of the range or beyond?
- See if physical consolidation is in order, particularly the reduction of parking, to maximize sales on a per acre basis.

In connection with this later physical testing, a development programming model will be available to the City as part of Phase II.

F. Commercial And Industrial Community

1. Establishments And Employment: We estimate that in 1984, the City presently had 1,550 business establishments with 14,600 employees. (See Tables 32 and 33). This number of establishments has remained relatively constant since 1970 when we estimate the figure was 1,530. Employment is approximately 5,000 below the 1970 level accounted for principally by recent closures of General Motors and Firestone plants.

2. Taxable Sales Activity: Taxable sales figures suggest that South Gate retail is particularly weak in apparel, general merchandise, eating and drinking, and furniture and appliance categories, categories normally found in major shopping centers. On the other hand, overall the City's per capita taxable sales are approximately equal to regional levels, mainly because of high non-retail sales by manufacturing and wholesale establishments. The figures further suggest that 12-city taxable sales are fairly close to regional levels (86.5 percent thereof), which suggests relatively little sales leakage after considering income differentials.

After adjustment for inflation, South Gate's 1984 taxable sales are 1.8 percent below 1970 - \$358 million versus \$365 million. Sales of retail outlets is actually up \$7 million (3 percent), but overall the situation has been essentially static since 1979. (See Tables 34 and 35.)

3. Building Permit Activity: Table 36 indicates the average annual commercial and industrial development activity during the 1980-84 period. The 12-city activity of 2.8 million square feet annually would require land area of 140 acres or more either raw or converted. However, South Gate is realizing little of this activity, to a large extent because of site unavailability.

In our view, these activity counts are favorable in terms of new development for South Gate under the assumption that appropriate sites can be obtained.

G. City And Agency Finances

We reviewed these finances in terms of potential revenue sources for land use improvement. These improve property and sales taxes, with recent history as follows:

	<u>1981-82</u>	<u>1984-85</u>
City Property Tax	497,000	750,000
City Sales Tax	3,325,000	3,400,000
Agency Tax Increment	3,451,000	2,779,000

In our judgment, the principal revenue source to select future improvement activity is Agency tax increment. As indicated, this increment has actually declined since 1981-82, principally as a result of General Motors plant closure. However, significant additional tax increment can be created through development of major sites, as discussed earlier.

TABLE 32: South Gate Business Establishments

	Establishments				Employment			
	<u>1967</u>	<u>1972</u>	<u>1977</u>	<u>1982</u>	<u>1967</u>	<u>1972</u>	<u>1977</u>	<u>1982</u>
Manufacturing								
Chemical & Allied		15	13			800	700	
Stone, Clay & Glass		11	9			700	500	
Primary Metal		20	18			1,100	900	
Fab Metal		44	90			3,100	3,100	
Machy Elymt Elec		76	65					
All Other	—	—	109		—	—	—	
Total Mfg	257	267	254	N/A	15,200	14,700	14,700	N/A
Wholesale	<u>94</u>	<u>103</u>	<u>93</u>	<u>85</u>	<u>1,231</u>	<u>976</u>	<u>910</u>	<u>1,232</u>
Sub total	351	370	347	N/A	16,431	15,676	15,610	
Retail	535	496	437	397	2,226	2,702	2,389	2,226
Services								
With Payroll		208	145	223				
Other	—	203	235	N/A				
Total Service	430	412	380	N/A	1,284	1,090	1,241	1,747
Grand Total	1,316	1,278	1,164		19,941	19,468	19,240	N/A

Sources: U.S. Bureau of the Census; Natelson-Levander-Whitney.

TABLE 33: 1985 South Gate Business Community Estimates

	1970	1980	1984
# Establishments			
Manufacturing	260	250	245
Wholesale	360	350	345
Business/Personal Services	420	450	470
Retail	490	440	490
Total	1,530	1,490	1,550
# Employees			
Manufacturing	15,000	14,500	9,000
Wholesale	1,100	1,100	1,300
Business/Personal Services	1,200	1,500	1,900
Retail	2,500	2,300	2,400
Total	19,800	19,400	14,600

Source: Natelson-Levander-Whitney.

TABLE 34: 1983 Annual Taxable Sales In The South Gate Region

	Total 12-County Area	South Gate	Bell	Bell Gardens	Commerce	Compton	Cudahy	Downey	Huntington Park	Lyewood	Maywood	Paramount	Vernon	Total 12-County Region
TOTAL SALES (000's)														
Apparel	59,172	2,903	944	a	4,926	2,819	a	23,294	20,309	2,510	a	1,379	a	2,652,893
General Merchandise	131,149	8,762	1,995	a	a	6,211	a	60,070	20,159	25,313	a	839	a	7,225,396
Drug	48,741	10,906	6,931	a	a	7,605	a	12,003	6,332	4,964	a	a	a	1,327,070
Food	152,163	22,837	13,473	a	4,229	16,644	a	49,150	13,849	21,504	a	10,469	a	5,314,899
Liquor	38,063	4,836	925	a	1,667	9,516	a	7,633	3,916	5,053	a	3,717	a	973,394
Eating & Drinking	155,352	16,439	14,816	a	13,132	15,050	a	55,845	16,607	13,033	a	10,430	a	7,029,407
Home Furnish & Appliance	53,265	5,261	1,509	a	10,442	4,511	a	10,450	7,463	2,544	a	3,077	a	2,461,073
Bldg Material & Farm	97,063	10,767	a	a	22,773	5,076	a	30,796	2,540	6,601	a	10,430	a	3,654,220
Auto Dealer & Supply	465,629	55,672	13,651	a	41,533	32,656	a	235,516	69,812	3,426	a	13,363	a	10,160,465
Service Station	175,737	27,764	10,354	a	15,754	23,403	a	30,504	12,848	14,783	a	32,845	a	6,007,051
Other Retail	339,047	10,074	3,321	55,025	62,985	3,791	31,448	32,630	8,984	3,106	30,200	29,460	67,205	6,101,578
Total Retail Outlets	1,715,581	105,101	67,919	55,025	177,441	127,204	31,440	571,995	162,821	103,725	30,200	115,409	67,205	53,418,242
All Other Outlets	1,639,932	96,365	20,210	24,687	746,499	93,743	27,256	87,657	47,355	44,396	15,597	143,479	292,688	25,455,610
Total All Outlets	3,355,513	201,466	88,129	79,712	923,940	221,027	58,704	659,652	210,176	148,121	45,805	258,888	359,893	78,913,850
POPULATION (000's)														
	495.8	72.6	26.7	35.6	11.8	85.4	19.0	83.2	48.5	51.0	23.1	39.0	0.1	12079
TAXABLE SALES PER CAPITA (0)														
Apparel	119	41	35	a	419	33	a	280	419	49	a	a	a	236
General Merchandise	265	121	75	a	a	73	a	810	416	496	a	22	a	590
Drug	98	150	260	a	a	89	a	144	131	97	a	a	a	110
Food	307	315	506	a	360	195	a	591	206	422	a	260	a	442
Liquor	77	67	35	a	142	111	a	92	81	115	a	95	a	81
Eating & Drinking	313	226	556	a	1,110	176	a	671	343	256	a	267	a	502
Home Furnish & Appliance	107	72	57	a	889	53	a	222	154	50	a	79	a	204
Bldg Material & Farm	196	250	a	a	1,930	59	a	370	52	131	a	267	a	303
Auto Dealer & Supply	939	767	512	a	3,535	302	a	2,831	1,441	67	a	343	a	842
Service Station	354	382	389	a	1,341	274	a	464	265	290	a	827	a	504
Other Retail	604	150	125	1,540	5,360	44	1,655	392	105	61	1,300	755	746,722	522
Total Retail Outlets	3,460	2,550	2,549	1,540	15,101	1,490	1,655	6,075	3,773	2,034	1,300	2,959	746,722	4,422
All Other Outlets	3,300	1,327	750	894	63,532	1,090	1,435	1,054	977	871	675	3,679	3,252,009	2,111
Total All Outlets	6,760	3,877	3,307	2,434	78,633	2,580	3,090	7,129	4,751	2,904	1,983	6,638	3,998,011	6,533
TAXABLE SALES PER CAPITA AS % OF FIVE-COUNTY REGION														
Apparel	50.5	17.4	15.0	a	177.5	14.0	a	110.5	177.5	20.9	a	a	a	100.0
General Merchandise	44.3	23.2	12.5	a	a	12.2	a	136.0	69.4	83.0	a	3.6	a	100.0
Drug	89.4	136.6	236.6	a	a	81.0	a	131.2	118.9	80.5	a	a	a	100.0
Food	69.5	71.2	114.5	a	81.5	44.1	a	133.0	64.7	95.5	a	60.0	a	100.0
Liquor	95.3	82.7	43.1	a	176.1	130.3	a	113.0	100.3	142.4	a	110.3	a	100.0
Eating & Drinking	53.0	30.9	95.5	a	192.0	30.3	a	115.3	50.9	43.9	a	46.0	a	100.0
Home Furnish & Appliance	52.7	35.6	27.0	a	436.2	25.9	a	100.9	75.6	24.5	a	30.7	a	100.0
Bldg Material & Farm	64.7	85.4	a	a	640.3	19.6	a	122.3	17.3	43.3	a	88.4	a	100.0
Auto Dealer & Supply	111.6	91.1	60.8	a	419.9	45.4	a	336.3	171.8	8.0	a	40.7	a	100.0
Service Station	70.3	75.9	77.1	a	266.1	34.4	a	92.0	52.6	57.5	a	164.1	a	100.0
Other Retail	131.1	20.7	23.9	296.7	1,027.5	8.5	317.3	75.2	35.6	11.7	250.7	144.8	143,133.5	100.0
Total Retail Outlets	70.2	57.7	57.6	35.0	341.5	33.7	37.4	155.5	85.3	46.0	29.6	66.9	16,465.0	100.0
All Other Outlets	56.7	62.9	35.9	32.9	3,009.9	52.0	60.0	49.9	46.3	41.2	32.0	174.3	154,073.3	100.0
Total All Outlets	101.6	59.3	50.6	34.3	1,203.6	39.6	47.3	121.4	72.7	44.5	30.4	101.6	61,200.0	100.0

Included in "Other Retail" category.

Sources: State Board of Equalization (Taxable Sales); State Department of Finance (Population);
Nelson-Levander Whitney.

TABLE 35: South Gate Taxable Sales, 1979-1984

	1979	1980	1981	1982	1983	1984 ^a
TAXABLE SALES AS REPORTED (\$000's)						
Apparel	1,995	1,983	2,352	2,575	2,983	2,988
General Merchandise	13,559	13,756	16,189	8,731	8,762	22,470
Drug	5,920	6,126	7,389	9,750	10,906	12,445
Food	13,912	15,772	19,988	20,813	22,837	22,587
Liquor	4,226	4,207	4,739	4,376	4,836	5,545
Eating & Drinking	13,739	14,259	14,924	15,573	16,439	18,549
Home Furnish & Appliance	6,661	5,457	5,712	5,287	5,261	6,030
Bldg Material & Farm	11,905	13,277	14,270	15,204	18,767	18,737
Auto Dealer & Supply	51,823	49,567	57,949	49,730	55,672	78,010
Service Station	21,236	29,256	33,179	30,805	27,764	31,327
Other Retail	8,172	6,838	6,942	6,317	10,874	7,416
Total Retail Outlets	153,148	160,498	183,641	169,169	185,101	226,114
All Other Outlets	102,177	116,529	114,474	90,872	96,365	102,357
Total All Outlets	255,325	277,027	298,115	260,041	281,466	358,471
ADJUSTMENT FACTORS						
Consumer Price Index (CPI)	217.4	246.8	272.4	289.1	298.4	310.7
1984 Dollar Multiplier	1.4292	1.2589	1.1406	1.0747	1.0412	1.0000
TAXABLE SALES ADJUSTED 1984 DOLLARS (\$000's)						
Apparel	2,851	2,496	2,683	2,767	3,106	2,988
General Merchandise	19,378	17,310	18,465	9,383	9,123	22,470
Drug	8,461	7,712	8,428	10,487	11,356	12,445
Food	19,883	19,856	22,798	22,368	23,778	22,587
Liquor	6,040	5,296	5,405	4,703	5,035	5,545
Eating & Drinking	19,635	17,951	17,022	16,737	17,117	18,549
Home Furnish & Appliance	9,520	6,870	6,515	5,682	5,478	6,030
Bldg Material & Farm	17,014	16,715	16,286	16,340	19,541	18,737
Auto Dealer & Supply	74,064	62,401	66,097	53,446	57,967	78,010
Service Station	30,350	36,831	37,844	33,107	28,908	31,327
Other Retail	11,679	8,608	7,918	6,789	11,322	7,416
Total Retail Outlets	218,873	202,053	209,461	181,808	192,731	226,114
All Other Outlets	146,020	146,700	130,569	97,661	100,337	132,357
Total All Outlets	364,901	348,753	340,031	279,470	293,068	358,471
INDEX TO 1979 (%)						
Apparel	100.0	87.6	94.1	97.1	108.9	104.8
General Merchandise	100.0	89.4	95.3	48.4	47.1	116.0
Drug	100.0	91.2	99.6	124.0	134.2	147.1
Food	100.0	99.9	114.7	112.5	119.6	113.6
Liquor	100.0	87.7	89.5	77.9	83.4	91.8
Eating & Drinking	100.0	91.4	86.7	85.2	87.2	94.5
Home Furnish & Appliance	100.0	72.2	68.4	59.7	57.5	63.4
Bldg Material & Farm	100.0	98.2	95.7	96.0	114.8	110.1
Auto Dealer & Supply	100.0	84.3	89.2	72.2	78.3	105.3
Service Station	100.0	121.4	124.7	109.1	95.3	103.2
Other Retail	100.0	73.7	67.8	50.1	96.9	63.5
Total Retail Outlets	100.0	92.3	95.7	83.1	88.1	103.3
All Other Outlets	100.0	100.5	89.4	66.9	68.7	90.6
Total All Outlets	100.0	95.6	93.2	76.6	80.3	98.2

^a Based on Jan-Sept related to prior year.

Sources: State Board of Equalization (taxable sales);
U. S. Department of Commerce (CPI);
Nateison Levander Whitney.

TABLE 36: Commercial And Industrial Building Permit Activity, 1980-1984

	1980	1981	1982	1983	^a 1984	5-Year Average
ESTIMATED BUILDING SPACE (SF).....						
BUILDING SPACE FACTORS (\$/SF)						
Commercial	35.00					
Industrial	17.50					
COMMERCIAL						
South Gate	146	24	11	14	21	43
Bell	93	0	8	39	31	34
Bell Gardens	11	25	10	25	33	21
Commerce	29	52	322	198	31	126
Compton	9	3	51	0	16	16
Cudahy	14	33	0	0	0	9
Downey	309	395	83	350	22	232
Huntington Park	0	0	93	4	224	64
Lynwood	4	11	116	9	4	29
Maywood	14	2	9	0	5	6
Paramount	28	8	22	46	35	28
Vernon	0	0	0	1	5	1
Total 12-City	656	554	725	687	427	610
5-County Region	70,595	73,137	65,292	63,211	69,310	68,309
INDUSTRIAL						
South Gate	59	49	146	18	18	58
Bell	276	146	0	0	11	86
Bell Gardens	40	26	35	86	95	56
Commerce	991	1,591	95	152	368	639
Compton	1,482	1,139	356	429	251	731
Cudahy	3	24	0	0	0	5
Downey	288	40	140	3	18	98
Huntington Park	0	0	0	9	199	42
Lynwood	7	28	15	17	0	13
Maywood	0	0	0	0	0	0
Paramount	75	100	89	270	343	175
Vernon	548	525	134	48	177	286
Total 12-City	3,768	3,668	1,009	1,030	1,488	2,191
5-County Region	44,927	41,111	28,994	29,844	35,788	35,973
COMMERCIAL & INDUSTRIAL COMBINED						
South Gate	204	73	157	31	38	101
Bell	369	146	8	39	42	121
Bell Gardens	51	51	45	111	128	77
Commerce	1,020	1,643	417	351	399	766
Compton	1,491	1,142	407	429	267	747
Cudahy	17	57	0	0	0	15
Downey	597	435	222	354	40	338
Huntington Park	0	0	93	13	423	106
Lynwood	11	39	130	25	4	42
Maywood	14	2	9	0	5	6
Paramount	103	100	111	315	378	203
Vernon	548	525	134	49	182	288
Total 12-City	4,424	4,221	1,734	1,717	1,987	2,881
5-County Region	115,522	114,248	94,286	92,256	105,098	104,282

The Agency presently has pledged a portion of its tax revenues for two installment notes:

- A purchase note of \$700,000 to Anthony Pools;
- A \$1.8 million note from City Bank.

These notes are for a period of five to six years. In addition, Agency staff plans to secure an additional \$14 million of bonding, using remaining available tax increments.

Further review of specific Agency financing will be part of the consultant team's Phase II work.

Since Proposition 13, user fees have been a growing portion of many cities' revenue. However, this has not been a major force in the City of South Gate. Further, such user fees do not appear to be a likely source for overall improvement activity. Various State subventions are also not to be relied upon as they are dependent heavily upon State legislation. In this respect, motor vehicle in lieu of taxes have been very volatile in the last several years.

The City has been active in obtaining grant monies from Federal and State sources. The \$2.2 million UDAG for Firestone plant conversion is a particular case in point. In general, grants at the Federal level have been declining during the Reagan Administration. On the other hand, in the evaluation of specific project opportunities at a later date, it may be appropriate to examine grants as a financing source.

H. Development Projections

Based purely upon past trends (1980-1984) new development activity in South Gate is projected as follows:

Residential Units	25-30
Commercial Building Space (SF)	40,000-50,000
Industrial Building Space (SF)	50,000-70,000

However, these projections do not reflect true economic opportunity. South Gate's historic building activity has been held down substantially by lack of site availability, as has opportunity throughout the 12-city area. Assuming adequate site availability, South Gate can draw from a larger demand pool. As a first step in this evaluation, we cite the following average annual activity since 1980 in the 12-city area and region:

	<u>12-City</u>	<u>Los Angeles County</u>	<u>5-County Region</u>
Residential Units	535	25,627	60,806
Commercial Bldg Sp (SF)	610,000	46,335,000	68,309,000
Industrial Bldg Sp (SF)	2,191,000	17,828,000	35,973,000

In our judgment, the greatest opportunity for economic development is industrial. Here the City with proper siting and projects can draw upon a regional market, well beyond the 12-city area. Retail commercial activity will draw from a smaller market, probably the 12-city area. Commercial office development (classified as commercial although often found in an industrial setting) can draw from a broader market as well, probably the 12-city area.

Given this situation, we suggest - for preliminary planning thinking - the following annual target development activity:

Residential Units	100-150
Commercial Bldg Sp (SF)	100,000-150,000
Industrial Bldg Sp (SF)	200,000-300,000

In our judgment, the most promising retail development opportunities include the following:

- Continued upgrading of Tweedy Boulevard;
- Business park office development in the eastern portion of the City, with Long Beach Freeway access;
- Highway commercial shopping center retail, with good access to the Long Beach Freeway.
- Auto park retail and some highway commercial shopping center retail, also having good Long Beach Freeway access.

The most promising industrial opportunities will be to the northeast, in major sites.

Noise Study

SOUTH GATE NOISE ELEMENT

TECHNICAL APPENDIX

SOUTH GATE NOISE ELEMENT - TECHNICAL APPENDIX

The State of California has mandated that each county and city prepare a Noise Element as part of its General Plan. Section 65302(g) of the California Government Code requires specifically:

"(g) A Noise Element shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

Highways and freeways.

Primary arterials and major local streets.

Passenger and freight on-line railroad operations and ground rapid transit systems.

Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.

Local industrial plants, including, but not limited to, railroad classification yards.

Other ground stationary noise sources identified by local agencies as contributing to the community noise environment.

Noise contours shall be shown for all of the sources and stated in terms of community noise equivalents level (CNEL) or day-night average level (LDN). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified in paragraphs (1) to (6), inclusive. The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise. The Noise Element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any. The adopted noise element shall serve as a guideline for compliance with the state's noise insulation standards."

The State Guidelines for Preparation and Content of Noise Elements of the General Plan indicates that the Noise Element should present the noise environment in terms of noise contours. For those areas identified as containing noise sensitive facilities, the noise environment is determined by monitoring. The purpose of this Technical Appendix is to provide background and supporting

information for the South Gate Noise Element. This Appendix contains background information on noise, health effects of noise, noise assessment criteria, methodology, measurement and modeling results.

1.0 BACKGROUND ON NOISE

1.1 Noise Definitions. Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the Decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud; and 20 dBA higher four times as loud; and so forth. Everyday sounds normally ranges from 30 dB (very quiet) to 100 dB (very loud). Examples of various sound levels in different environments are shown in Figure A1.

Noise has been defined as unwanted sound and it is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. These criteria are based on such known impacts of noise on people as hearing loss, speech interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the following narratives:

HEARING LOSS is not a concern in community noise problems of this type. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. Noise levels in

neighborhoods, even in very noisy airport environs, are not sufficiently loud to cause hearing loss.

SPEECH INTERFERENCE is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level. Figure A2 shows the impact of noise and speech interference.

SLEEP INTERFERENCE is a major noise concern because sleep is the most noise sensitive human activity. Sleep disturbance studies have identified interior noise levels that have the potential to cause sleep disturbance. Note that sleep disturbance does not necessarily mean awakening from sleep, but can refer to altering the pattern and stages of sleep.

PHYSIOLOGICAL RESPONSES are those measurable effects of noise on people which are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are sign of harm.

ANNOYANCE is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

1.2 Noise Metrics and Assessment Criteria. Community noise is generally not steady state and varies with time. Under conditions of non-steady state noise, some type of statistical metric is necessary in order to quantify noise exposure over a long period of time. Several rating scales have been developed for describing the effects of noise on people. They are designed to account for the above known effects of noise on people.

Based on these effects, the observation has been made that the potential for a noise to impact people

Figure A1

Examples of Typical Sound Levels

SOUND LEVELS AND LOUDNESS OF ILLUSTRATIVE NOISES IN INDOOR AND OUTDOOR ENVIRONMENTS
(A-Scale Weighted Sound Levels)

dB(A)	OVER-ALL LEVEL Sound Pressure Level Approx. 0.0002 Microbar	COMMUNITY (Outdoor)	HOME OR INDUSTRY	LOUDNESS Human Judgement of Different Sound Levels
130	UNCOMFORTABLY	Military Jet Aircraft Take-Off With After-burner From Aircraft Carrier @ 50 Ft. (130)	Oxygen Torch (121)	120 dB(A) 32 Times as Loud
120 110	LOUD	Turbo-Fan Aircraft @ Take Off Power @ 200 Ft. (90)	Riveting Machine (110) Rock-N-Roll Band (108-114)	110 dB(A) 16 Times as Loud
100	VERY	Jet Flyover @ 1000 Ft. (103) Boeing 707, DC-8 @ 6080 Ft. Before Landing (106) Bell J-2A Helicopter @ 100 Ft. (100)		100 dB(A) 8 Times as Loud
90	LOUD	Power Mower (96) Boeing 737, DC-9 @ 6080 Ft. Before Landing (97) Motorcycle @ 25 Ft. (90)	Newspaper Press (97)	90 dB(A) 4 Times as Loud
80		Car Wash @ 20 Ft. (89) Prop. Airplane Flyover @ 1000 Ft. (88) Diesel Truck, 40 MPH @ 50 Ft. (84) Diesel Train, 45 MPH @ 100 Ft. (83)	Food Blender (88) Milling Machine (85) Garbage Disposal (80)	80 dB(A) 2 Times as Loud
70	MODERATELY LOUD	High Urban Ambient Sound (80) Passenger Car, 65 MPH @ 25 Ft. (77) Freeway @ 50 Ft. From Pavement Edge, 10:00 AM (76 +/- 6)	Living Room Music (76) TV-Audio, Vacuum Cleaner	70 dB(A)
60		Air Conditioning Unit @ 100 Ft. (60)	Cash Register @ 10 Ft. (65-70) Electric Typewriter @ 10 Ft. (64) Dishwasher (Rinses) @ 10 Ft. (60) Conversation (60)	60 dB(A) 1/2 as Loud
50	QUIET	Large Transformers @ 100 Ft. (50)		50 dB(A) 1/4 as Loud
40		Bird Calls (44) Lower Limit Urban Ambient Sound (40)		40 dB(A) 1/8 as Loud
	JUST AUDIBLE	(dB(A) Scale Interrupted)		
10	THRESHOLD OF HEARING			

SOURCE: Reproduced from Melville C. Branch and R. Dale Beland, Outdoor Noise in the Metropolitan Environment,
Published by the City of Los Angeles, 1970, p.2.

is dependent on the total acoustical energy content of the noise. A number of noise scales have been developed to account for this observation. These scales are the: Equivalent Noise Level (LEQ), the Day Night Noise Level (LDN), and the Community Noise Equivalent Level (CNEL). These scales are described in the following paragraphs.

LEQ is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. LEQ is the "energy" average noise level during the time period of the sample. LEQ can be measured for any time period, but is typically measured for 15 minutes, 1 hour or 24-hours.

LDN is a 24-hour, time-weighted annual average noise level. Time-weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized for occurring at these times. In the LDN scale, those events that take place during the night (10 pm to 7 am) are penalized by 10 dB. This penalty was selected to attempt to account for increased human sensitivity to noise during the quieter period of a day, where sleep is the most probable activity.

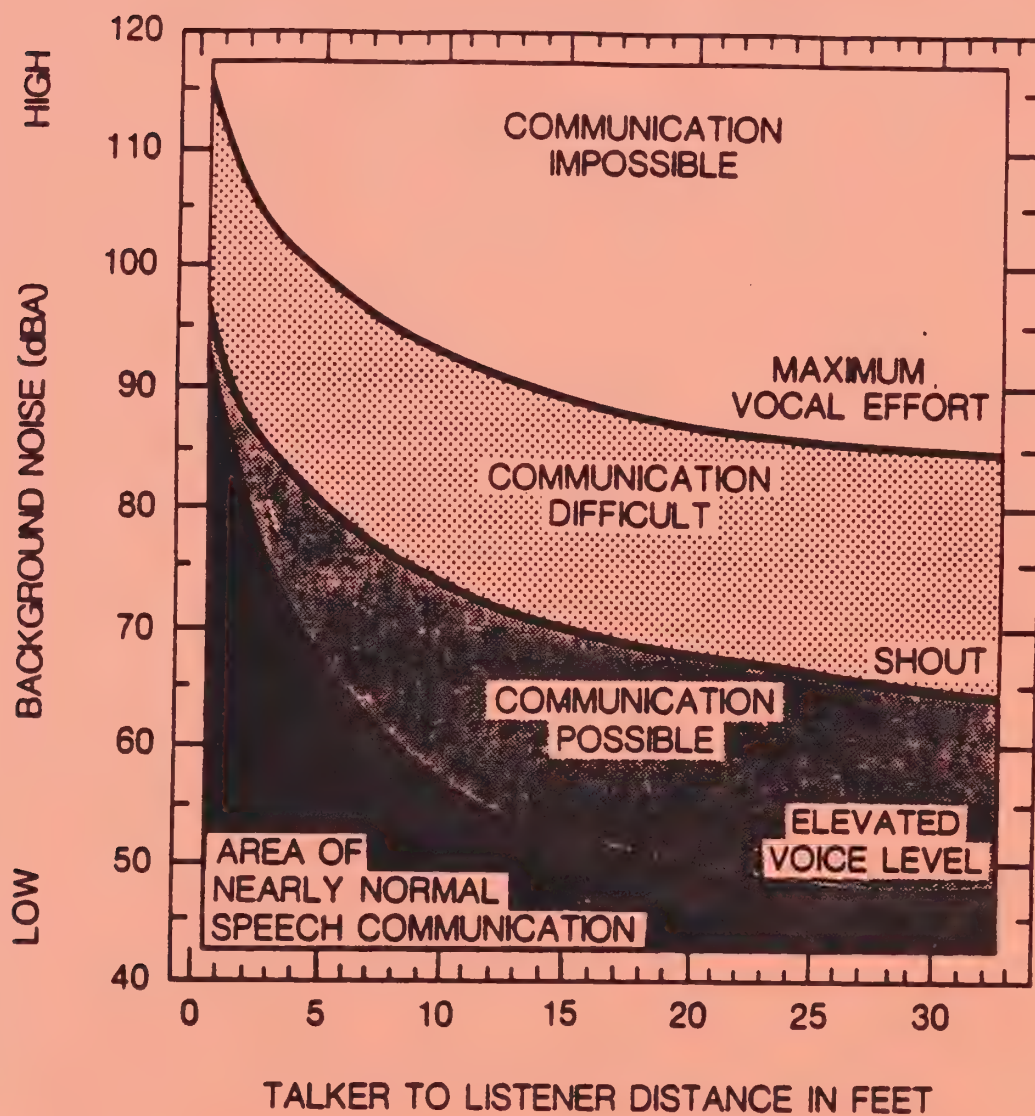
CNEL is similar to the LDN scale except that it includes an additional 5 dBA penalty for events that occur during the evening (7pm to 10pm) time period. Either LDN or CNEL may be used to identify community noise impacts within the Noise Element.

The public reaction to different noise levels varies from community to community. Extensive research has been conducted on humans responses to exposure of different levels of noise. Figure A3 relates CNEL noise levels to community response from some of these surveys. Community noise standards are derived from tradeoffs between community response surveys, such as this, and economic considerations for achieving these levels.

Intermittent or occasional noise such as those associated with stationary noise sources is not of sufficient volume to exceed community noise standards that are based on a time averaged scales such as the CNEL scale. To account for intermittent noise, another method to characterize noise is the Percent Noise Level (L%). The Percent Noise Level is the level exceeded X% of the time

FIGURE A2

EFFECTS OF NOISE ON SPEECH INTERFERENCE



during the measurement period. Examples of various noise environments in terms of the Percent Noise Levels are shown in Figure A4.

Noise Ordinances are typically specified in terms of the percent noise levels. Ordinances are designed to protect people from non-transportation related noise sources such as music, machinery and vehicular traffic on private property. Noise Ordinances do not apply to motor vehicle noise on public streets or other transportation related noise sources that are preempted by the State or Federal government.

1.3 Noise/Land Use Compatibility Guidelines. The purpose of this section is to present information regarding the compatibility of various land uses with environmental noise. It is from these guidelines and standards, that the City of South Gate Noise Criteria and Standards have been developed. Noise/Land use guidelines have been produced by a number of Federal and State agencies including the Federal Highway Administration, the Environmental Protection Agency, the Department of Housing and Urban Development, the American National Standards Institute and the State of California. These guidelines, presented in the following paragraphs, are all based upon cumulative noise criteria such as LEQ, LDN or CNEL.

The ENVIRONMENTAL PROTECTION AGENCY published in March 1974 a very important document entitled "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety" (EPA 550/9-74-004). Figure A5 presents a table of land uses and requisite noise levels. In this table, 55 LDN is described as the requisite level with an adequate margin of safety for areas with outdoor uses, this includes residences, and recreational areas. The EPA "levels document" does not constitute a standard, specification or regulation, but identifies safe levels of environmental noise exposure without consideration for economic cost for achieving these levels.

The FEDERAL HIGHWAY ADMINISTRATION (FHWA) has adopted and published noise abatement criteria for highway construction projects. The noise abatement criteria specified by the FHWA are presented in Figure A6 in terms of the maximum one hour Noise Equivalent Level (LEQ). The FHWA noise abatement criteria basically establishes an

FIGURE A3

COMMUNITY REACTION SURVEYS

COMMUNITY REACTION

VIGOROUS
COMMUNITY
ACTION

SEVERAL
THREATS
OF LEGAL
ACTION, OR
STRONG
APPEALS
TO LOCAL
OFFICIALS TO
STOP NOISE

WIDESPREAD
COMPLAINTS
OR SINGLE
THREAT OF
LEGAL ACTION

SPORADIC
COMPLAINTS

NO REACTION,
ALTHOUGH
NOISE IS
GENERALLY
NOTICEABLE

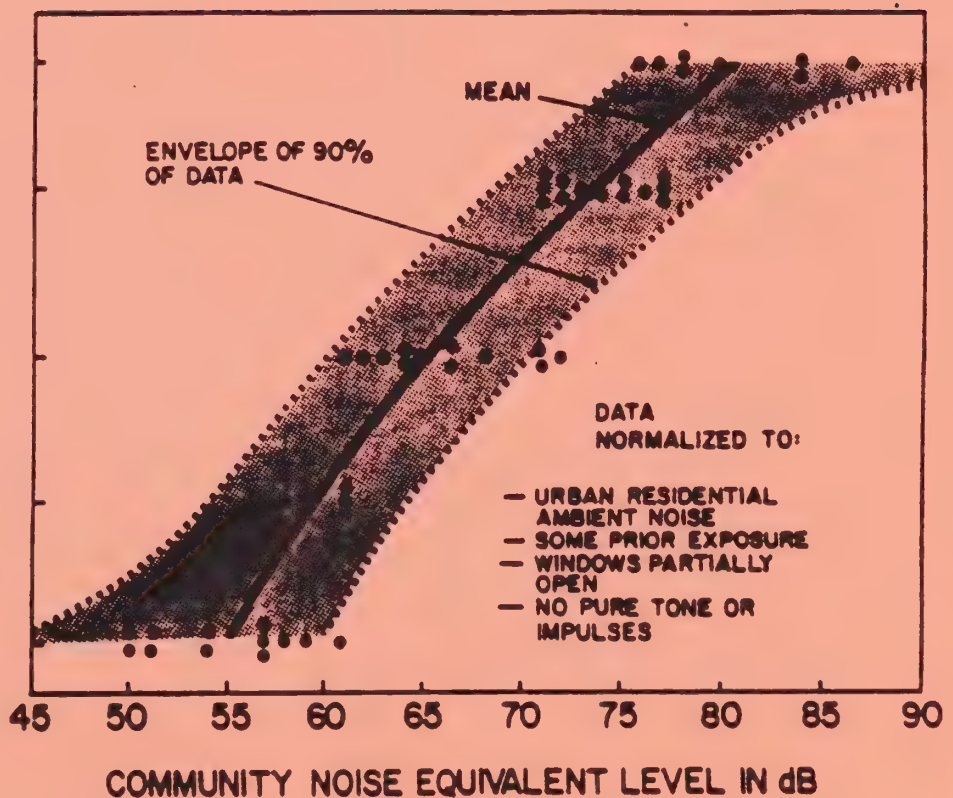
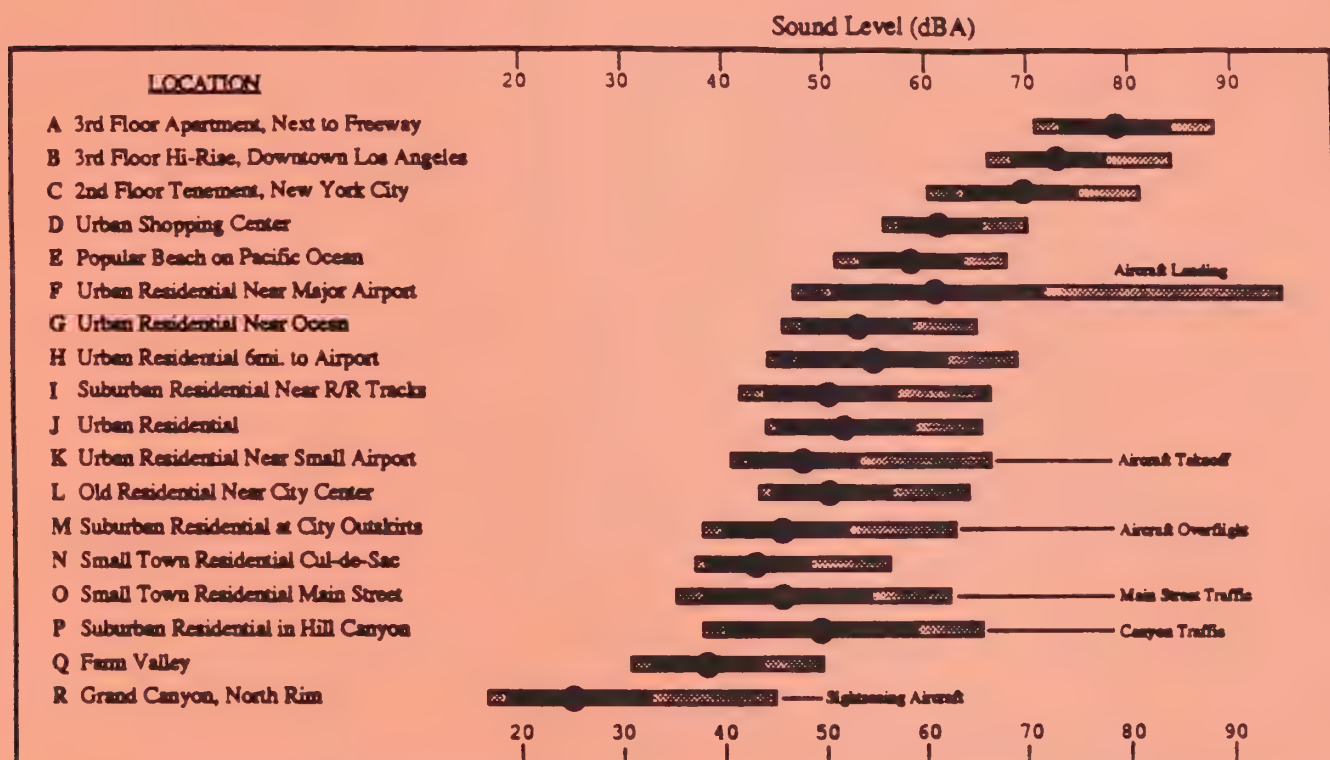


Figure A4

Examples of Daytime Outdoor Noise Levels



SOURCE: Community Noise, EPA, 1971

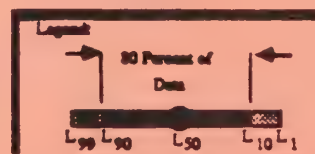


FIGURE A5

ENVIRONMENTAL PROTECTION AGENCY GUIDELINES

	Measure	Indoor Activity Inter- ference	Hearing Loss Considera- tion	To Protect Against Both Ef- fects (b)	Outdoor Activity Inter- ference	Hearing Loss Considera- tion	To Protect Against Both Ef- fects (b)
Residential with Out- side Space and Farm Residences	L _{dn}	45		45	55		55
	L _{eq} (24)		70			70	
Residential with No Outside Space	L _{dn}	45		45			
	L _{eq} (24)		70				
Commercial	L _{eq} (24)	(a)	70	70(c)	(a)	70	70(c)
Inside Transportation	L _{eq} (24)	(a)	70	(a)			
Industrial	L _{eq} (24)(d)	(a)	70	70(c)	(a)	70	70(c)
Hospitals	L _{dn}	45		45	55		55
	L _{eq} (24)		70			70	
Educational	L _{eq} (24)	45		45	55		55
	L _{eq} (24)(d)		70			70	
Recreational Areas	L _{eq} (24)	(a)	70	70(c)	(a)	70	70(c)
Farm Land and General Unpopulated Land	L _{eq} (24)				(a)	70	70(c)

Code:

- Since different types of activities appear to be associated with different levels, identification of a maximum level for activity interference may be difficult except in those circumstances where speech communication is a critical activity. (See Figure D-2 for noise levels as a function of distance which allow satisfactory communication.)
- Based on lowest level.
- Based only on hearing loss.
- An L_{eq}(8) of 75 dB may be identified in these situations so long as the exposure over the remaining 16 hours per day is low enough to result in a negligible contribution to the 24-hour average, i.e., no greater than an L_{eq} of 60 dB.

Note: Explanation of identified level for hearing loss: The exposure period which results in hearing loss at the identified level is a period of 40 years.

*Refers to energy rather than arithmetic averages.

SOURCE : EPA

Figure A6
FHWA Noise Abatement Criteria

ACTIVITY CATEGORY	DESIGN NOISE LEVEL - LEQ	DESCRIPTION OF ACTIVITY CATEGORY
A	57 (Exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of open spaces, or historic districts which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas and parks which are not included in category A and residences, motels, hotels, public meeting rooms, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Category A or B above.
D	-	For requirements of undeveloped lands see FHWA PPM 773.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

exterior noise goal for residential land uses of 67 LEQ and an interior goal for residences of 52 LEQ. The noise abatement criteria applies to private yard areas and assumes that typical wood frame homes with windows open provide 10 dB noise reduction (outdoor to indoor) and 20 dB noise reduction with windows closed.

The STATE OF CALIFORNIA requires each City and County to adopt Noise Elements of their General Plans. Such Noise Elements must contain a Noise/Land Use compatibility matrix. A recommended (but not mandatory) matrix is presented in the "Guidelines for the Preparation and Content of Noise Elements of the General Plan," (Office of Noise Control, California Department of Health, February 1976). Figure A7 presents this recommended matrix.

2.0 METHODOLOGY

The noise environment in South Gate was determined through the employment of a comprehensive noise measurement survey of existing noise sources and incorporating these results into computer noise models (it is, of course, impossible to measure future noise levels so we must rely on computer noise models for future noise estimates). The noise environment is commonly presented graphically in terms of lines of equal noise levels, or noise contours. The following paragraphs detail the methodology used in the measurement survey and computer modeling of these results into noise contours.

2.1 Measurement Procedure. Twenty two sites were selected for measurement of the noise environment in South Gate. A review of noise complaints and identification of major noise sources in the community provided the initial base for development of the community noise survey. The measurement locations were selected on the basis of proximity to major noise sources and noise sensitivity of the land use. The measurement locations are depicted in Figure A8.

The noise measurement survey utilized Digital Acoustics Model 607P Version 3 automated digital noise data acquisition system. This instrument automatically calculate both the Equivalent Noise Level (LEQ) and Percent Noise Level (L%) for any specific time period. The noise monitors were

Figure A7

California Land Use Compatibility Studies

Land Use Category	Community Noise Exposure Ldn or CNEL, dB					
	55	60	65	70	75	80
Residential - Low Density Single Family, Duplex, Mobile Homes	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Multiple Family	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Transient Lodging - Motels, Hotels	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Schools, Libraries, Churches Hospitals, Nursing Homes	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Auditoriums, Concert Halls, Amphitheatres	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Sports Arena, Outdoor Spectator Sports	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Playgrounds, Neighborhood Parks	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Golf Courses, Riding Stables Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Unacceptable	Clearly Unacceptable
Office Buildings, Business Commercial and Residential	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Industrial, Manufacturing Utilities Agriculture	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable

Interpretation

Normally Acceptable

Specified Land Use is Satisfactory, Based Upon the Assumption that Any Buildings Involved are of Normal Conventional Construction, Without Any Special Noise Insulation Requirements.

Conditionally Acceptable

New Construction or Development Should be Undertaken Only After a Detailed Analysis of the Noise Reduction Requirement is Made and Needed Noise Insulation Features Included in the Design. Conventional Construction, but with Closed Windows and Fresh Air Supply Systems or Air Conditioning, Will Normally Suffice.

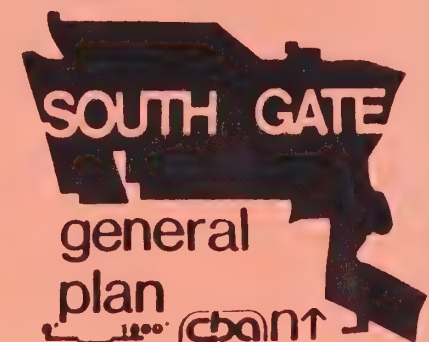
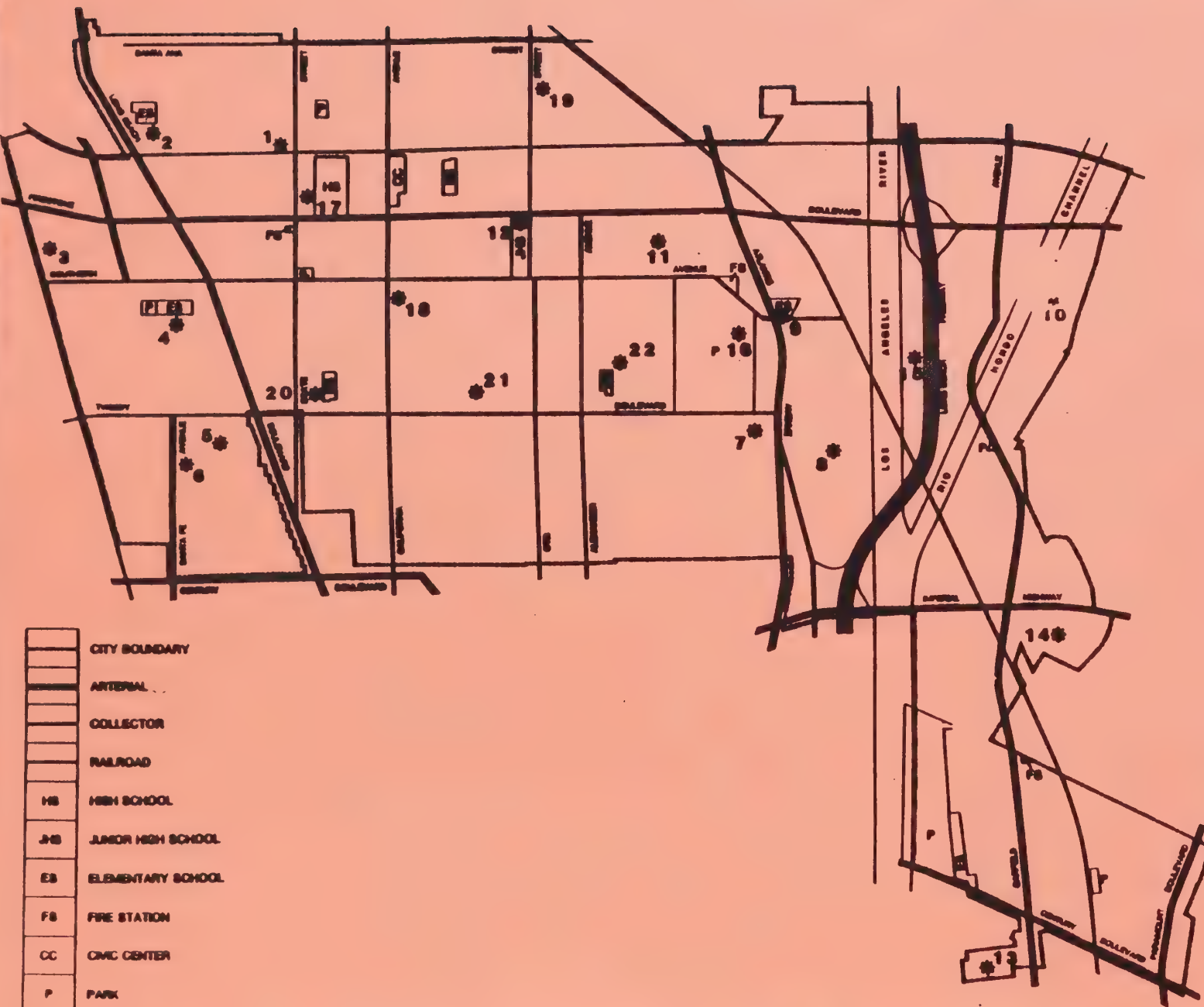
Normally Unacceptable

New Construction or Development Should Generally be Discouraged. If New Construction or Development Does Proceed, a Detailed Analysis of the Noise Reduction Requirements Must be Made and Needed Noise Insulation Features Included in the Design.

Clearly Unacceptable

New Construction or Development Should Generally not be Undertaken.

Figure A8
Noise Measurement
Locations



equipped with General Radio Model 1962-9610 1/2 inch electret microphones and General Radio Type 9600 preamplifiers. The system was calibrated with a General Radio Model 1562-9710 (S/N 889) calibrator with calibration traceable to the National Bureau of Standards. Calibration for the calibrator is certified through the duration of the measurements by General Radio with certification number RN5619. This measurement system satisfies the ANSI (American National Standards Institute) Standards 1.4 for Type 1 precision noise measurement instrumentation.

2.2 Computer Modeling. The traffic noise levels projected in the Noise Element were computed using the Highway Noise Model published by the Federal Highway Administration ("FHWA Highway Traffic Noise Prediction Model," FHWA-RD-77-108, December 1978). The FHWA Model uses traffic volume, vehicle mix, vehicle speed, and roadway geometry to compute the LEQ noise level. A computer code has been written which computes equivalent noise levels for each of the time periods used in CNEL. Weighting these noise levels and summing them results in the CNEL for the traffic projections used. The traffic data used to project these noise levels are derived from the Circulation Element for the City. The traffic mixes and time distributions for the arterials are presented in Table A1. The traffic mix data for the arterials are based on measurements for roadways in Southern California and are considered typical for arterials in this area. The traffic mix assumptions for the freeway are based upon Caltrans data specific for this section of the freeway.

**Table A1
TRAFFIC MIX FOR ARTERIALS**

	ARTERIALS			FREEWAYS		
	PERCENT OF AVERAGE DAILY TRIPS DAY	PERCENT OF AVERAGE DAILY TRIPS EVENING	PERCENT OF AVERAGE DAILY TRIPS NIGHT	PERCENT OF AVERAGE DAILY TRIPS DAY	PERCENT OF AVERAGE DAILY TRIPS EVENING	PERCENT OF AVERAGE DAILY TRIPS NIGHT
Automobile	75.51	12.57	9.34	73.32	11.28	9.40
Medium Truck	1.56	0.09	0.19	2.34	.36	.30
Heavy Truck	0.64	0.02	0.08	2.34	.36	.30

3.0 RESULTS

3.1 Measurement Results. The noise measurement program was conducted from January 13, 1986 to January 17, 1986 at twenty two locations throughout the City. The results of the ambient noise measurements at each site are depicted in Figure A9 (Part 1 through 4). These figures also depict the date and time of the measurement and the primary noise source affecting the noise environment. Each site was monitored for a minimum of 15 minutes. The quantities measured were the Equivalent Noise Level (LEQ) and the Percent Noise Levels (L%). Percent Noise Levels are another method of characterizing ambient noise where, for example, L90 is the noise level exceeded 90 percent of the time, L50 is the level exceeded 50 percent, and L10 is the level exceeded 10 percent of the time. L90 represents the background or minimum noise level, L50 represents the average noise level, and L10 the peak or intrusive noise levels.

3.2 Noise Contours. The existing and future noise levels in the City were established in terms of the CNEL indices by modeling all of the noise sources for the existing and future traffic and speed characteristics. These results were presented on the contour map contained within the Noise Element (Figures 1 and 2). The results are also presented in tabularized format in Tables A2 for existing conditions and Table A3 for future conditions. The distances to the CNEL contours for the roadways in the vicinity of South Gate are given in these tables. These represent the distance from the centerline of the road to the contour value shown. Note that these tables do not include the mitigating effect of noise barriers.

Figure A9 (Part 1) Noise Measurement Results

SITE: # 1

LOCATION: *Ardmore Ave. at State St.*

DATE: *JAN 13, 1986*

TIME: *3:40 p.m.*

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
64.4	78	67	62	57

PRIMARY NOISE SOURCES:

Light Traffic

COMMENTS:

SITE: # 2

LOCATION: *Liberty School*

DATE: *JAN 17, 1986*

TIME: *1:40 p.m.*

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
61.4	74	65	57	52

PRIMARY NOISE SOURCES:

Aircraft Flyovers

COMMENTS:

Mild School Activity

SITE: # 3

LOCATION: *#8836 Calden Ave.*

DATE: *JAN 17, 1986*

TIME: *10:00 a.m.*

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
60.4	73	63	58	54

PRIMARY NOISE SOURCES:

*Traffic on Firestone Blvd.
Aircraft Flyovers*

COMMENTS:

Commercial - Residential Border

SITE: # 4

LOCATION: *Stanford Ave. School*

DATE: *JAN 17, 1986*

TIME: *10:40 a.m.*

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
61.9	71	67	57	50

PRIMARY NOISE SOURCES:

Aircraft Flyovers

COMMENTS:

Mild School Activity

SITE: # 5

LOCATION: *#9916 Monara Ave.*

DATE: *JAN 17, 1986*

TIME: *11:04 a.m.*

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
60.5	72	64	58	52

PRIMARY NOISE SOURCES:

*Traffic on Tweedy Blvd.
Aircraft Flyovers*

COMMENTS:

Proposed School

SITE: # 6

LOCATION: *#2821 Wisconsin Ave.*

DATE: *JAN 17, 1986*

TIME: *11:25 a.m.*

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
57.9	76	59	53	49

PRIMARY NOISE SOURCES:

Aircraft Flyovers

COMMENTS:

Proposed G.M. Plant

Figure A9 (Part 2) Noise Measurement Results

SITE: # 7

LOCATION: Adohr Farms

DATE: JAN 14, 1986

TIME: 12:05 p.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
64.7	71	66	63	63

PRIMARY NOISE SOURCES:

*Light Machinery
Dairy Trucks Being Loaded*

COMMENTS:

Commercial - Residential Border

SITE: # 9

LOCATION: Tweedy School

DATE: JAN 14, 1986

TIME: 12:30 p.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
65.1	78	68	63	60

PRIMARY NOISE SOURCES:

Traffic

COMMENTS:

*Heavy Commercial Activity -
(Many Large Trucks)*

SITE: # 11

LOCATION: #8936 Kauffman Ave.

DATE: JAN 14, 1986

TIME: 1:15 p.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
62.2	61	61	51	46

PRIMARY NOISE SOURCES:

*Light Machinery at Ameron Plant
Aircraft Flyovers*

COMMENTS:

Commercial - Residential Border

SITE: # 8

LOCATION: #5301 Aldrich

DATE: JAN 14, 1986

TIME: 11:35 a.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
58.1	65	59	57	55

PRIMARY NOISE SOURCES:

*Traffic on Long Beach Fwy.
Light Commercial Noise*

COMMENTS:

Commercial - Residential Border

SITE: # 10

LOCATION: #9306 Karmont Ave.

DATE: JAN 14, 1986

TIME: 9:30 a.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
52.8	66	54	51	48

PRIMARY NOISE SOURCES:

*Trucks Being Loaded at Rockview Dairy
Heavy Machinery at Pacific Alloy
Aircraft Flyovers*

COMMENTS:

Commercial - Residential Border

SITE: # 12

LOCATION: Southgate Junior High School

DATE: JAN 13, 1986

TIME: 4:32 p.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
68.2	79	71	66	60

PRIMARY NOISE SOURCES:

Traffic on Firestone

COMMENTS:

No School Activity

Figure A9 (Part 3)

Noise Measurement Results

SITE: # 13
LOCATION: #7415 Howery St.

DATE: JAN 14, 1986
TIME: 11:05 a.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
50.6	66	52	48	46

PRIMARY NOISE SOURCES:
Ambient
Distant Traffic on Garfield

COMMENTS:
Near Future Century Fwy Site

SITE: # 14
LOCATION: #10980 Cassina

DATE: JAN 14, 1986
TIME: 10:40 a.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
50.5	64	53	48	46

PRIMARY NOISE SOURCES:
Heavy Commercial Noise -
(Machine Shops, Welding)

COMMENTS:
Commercial - Residential Border

SITE: # 15
LOCATION: Thunderbird Villa Trailer Park

DATE: JAN 14, 1986
TIME: 10:10 a.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
66.2	74	68	65	63

PRIMARY NOISE SOURCES:
Traffic on Long Beach Fwy.
Distant Commercial Noise

COMMENTS:

SITE: # 16
LOCATION: Southgate Park

DATE: JAN 14, 1986
TIME: 12:50 p.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
59.2	68	62	57	55

PRIMARY NOISE SOURCES:
Aircraft Flyovers

COMMENTS:
Minimal Park Activity

SITE: # 17
LOCATION: Southgate High School

DATE: JAN 13, 1986
TIME: 4:10 p.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
65.3	78	68	62	60

PRIMARY NOISE SOURCES:
Traffic on Firestone

COMMENTS:
Minimal School Activity

SITE: # 18
LOCATION: #9212 California

DATE: JAN 17, 1986
TIME: 12:20 p.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
68.1	82	71	65	59

PRIMARY NOISE SOURCES:
Traffic on California and Southern
Aircraft Flyovers

COMMENTS:
Proposed High School

Figure A9 (Part 4) Noise Measurement Results

SITE: # 19

LOCATION: #8129 Otis St.

DATE: JAN 14, 1986

TIME: 1:45 p.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
67.5	82	70	65	61

PRIMARY NOISE SOURCES:

Heavy Commercial Noise From Wells Inc.

Traffic on Otis

Aircraft Flyovers

COMMENTS:

Commercial - Residential Border

SITE: # 20

LOCATION: Victoria Ave. School

DATE: JAN 17, 1986

TIME: 11:50 a.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
58.0	69	62	53	49

PRIMARY NOISE SOURCES:

Aircraft Flyovers

Traffic on Dearborn

COMMENTS:

Moderate School Activity

SITE: # 21

LOCATION: #9806 San Luis Ave.

DATE: JAN 17, 1986

TIME: 12:44 p.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
58.4	78	62	53	48

PRIMARY NOISE SOURCES:

Aircraft Flyovers

COMMENTS:

Proposed Elementary School

SITE: # 22

LOCATION: Bryson Ave. School

DATE: JAN 17, 1986

TIME: 1:15 p.m.

MEASURED VALUES (dBA)

LEQ	Lmax	L10	L50	L90
58.7	80	59	50	45

PRIMARY NOISE SOURCES:

Aircraft Flyovers

COMMENTS:

Minimal School Activity

Table A2 (Part 1)
CNEL NOISE LEVELS
FOR EXISTING TRAFFIC CONDITIONS

ROADWAY SEGMENT	TRAFFIC VOLUME	VEHICLE SPEED (MPH)	CNEL AT 100 FEET	DISTANCE TO CNEL CONTOUR FROM ROADWAY CENTERLINE (FT)		
				60 CNEL	65 CNEL	70 CNEL
SANTA FE AVENUE						
North City Limit to Firestone	8,900	35	59.2	88	41	19
Firestone to Southern	7,300	35	58.3	77	36	17
Tweedy to Century	3,900	35	55.6	51	24	11
LONG BEACH BOULEVARD						
Santa Ana to Firestone	18,000	40	63.6	175	81	38
Firestone to Southern	19,400	40	64.0	184	85	40
Southern to Tweedy	18,000	40	63.6	175	81	38
STATE STREET						
Santa Ana to Firestone	12,000	35	60.5	107	50	23
Firestone to Tweedy	15,000	35	61.4	125	58	27
CALIFORNIA AVENUE						
Santa Ana to Firestone	11,000	35	60.1	101	47	22
Firestone to Tweedy	11,000	35	60.1	101	47	22
Tweedy to Century						
OTIS STREET						
Santa Ana to Firestone	12,000	35	60.5	107	50	23
Firestone to Southern	4,000	35	55.7	52	24	11
Southern to Tweedy	6,000	35	57.5	68	31	15
Tweedy to Century	3,600	35	55.2	48	22	10
ALEXANDER AVENUE						
Firestone to Southern	3,000	35	54.4	43	20	9
Southern to Tweedy	4,500	35	56.2	56	26	12
Tweedy to Century	2,000	35	52.7	33	15	7
ATLANTIC AVENUE						
Firestone to Southern	18,100	40	63.7	176	81	38
Southern to Tweedy	17,000	40	63.4	168	78	36
Tweedy to Wright	23,600	40	64.8	210	97	45
Wright to Imperial	14,300	40	62.6	150	70	32
GARFIELD AVENUE						
North City Limit to Firestone	20,000	40	64.1	188	87	40
Firestone to Southern	21,800	40	64.5	199	92	43
Southern to Imperial	18,200	40	63.7	176	82	38
Imperial to Gardendale	12,900	40	62.2	140	65	30
Gardendale to Century	15,000	40	62.9	155	72	33
PARAMOUNT BOULEVARD						
Gardendale to Century	16,000	40	63.1	162	75	35
RAYO AVENUE						
Atlantic to Firestone	8,200	35	58.8	83	39	18

Table A2 (Part 2)
CNEL NOISE LEVELS
FOR EXISTING TRAFFIC CONDITIONS

ROADWAY SEGMENT	TRAFFIC VOLUME	VEHICLE	CNEL	DISTANCE TO CNEL CONTOUR		
		SPEED (MPH)	AT 100 FEET	FROM ROADWAY CENTERLINE (FT)		
				60 CNEL	65 CNEL	70 CNEL
SANTA ANA STREET						
Long Beach to California	8,000	35	58.8	82	38	18
California to San Juan	8,000	35	58.7	82	38	18
San Juan to Otis	7,000	35	58.1	75	35	16
FIRESTONE BOULEVARD						
West City Limit to Long Beach	24,700	40	65.0	216	100	47
Long Beach to California	28,000	40	65.6	235	109	51
California to Otis	28,000	40	65.6	235	109	51
Otis to Alexander	28,000	40	65.6	235	109	51
Alexander to Atlantic	24,400	40	65.0	214	99	46
Atlantic to Rayo	33,000	40	66.3	262	122	57
Rayo to Long Beach Fwy.	47,500	40	67.9	334	155	72
Long Beach Fwy to Garfield	48,700	40	68.0	340	158	73
Garfield to East City Limit	36,300	40	66.9	279	130	60
SOUTHERN AVENUE						
West City Limit to Santa Fe	3,000	35	54.4	43	20	9
Santa Fe to Long Beach	8,700	35	59.1	87	40	19
Long Beach to California	10,000	35	59.7	95	44	20
California to San Juan	8,000	35	58.7	82	38	18
San Juan to Otis	4,000	35	55.7	52	24	11
Otis to Alexander	9,200	35	59.3	90	42	19
Alexander to Atlantic	4,000	35	55.7	52	24	11
Garfield to East City Limit	12,000	35	60.5	107	50	23
TWEEDY BOULEVARD						
West City Limit to Truba	5,000	35	56.7	60	28	13
Truba to Santa Fe	6,250	35	57.6	70	32	15
Santa Fe to Long Beach	8,000	35	58.7	82	38	18
Long Beach to State	12,000	35	60.5	107	50	23
State to California	15,000	35	61.4	125	58	27
California to San Juan	18,000	35	62.2	141	65	30
San Juan to Otis	20,000	35	62.7	151	70	33
Otis to Alexander	18,000	35	62.2	141	65	30
Alexander to Hildreth	16,000	35	61.7	130	60	28
Hildreth to Atlantic	12,000	35	60.5	107	50	23
CENTURY BOULEVARD						
Santa Fe to Long Beach	10,853	40	61.4	125	58	27
IMPERIAL HIGHWAY						
Bullis to Long Beach Fwy.	32,200	40	66.2	258	120	56
Long Beach Fwy to Garfield	50,000	40	68.1	346	160	75
Garfield Pl. to Garfield Ave.	34,100	40	66.4	268	124	58
Garfield to East City Limit	35,000	40	66.5	273	127	59
LONG BEACH FREEWAY						
Firestone to Imperial	152,000	55	78.3	1670	775	360

Table A3 (Part 1)
CNEL NOISE LEVELS
FOR FUTURE TRAFFIC CONDITIONS

ROADWAY SEGMENT	TRAFFIC VOLUME	VEHICLE SPEED (MPH)	CNEL AT 100 FEET	DISTANCE TO CNEL CONTOUR FROM ROADWAY CENTERLINE (FT)		
				60 CNEL	65 CNEL	70 CNEL
SANTA FE AVENUE						
North City Limit to Firestone	9,200	35	59.3	90	42	19
Firestone to Southern	7,500	35	58.4	78	36	17
Tweedy to Century	4,000	35	55.7	52	24	11
LONG BEACH BOULEVARD						
Santa Ana to Firestone	18,500	40	63.8	178	83	38
Southern to Tweedy	18,500	40	63.8	178	83	38
Firestone to Southern	20,000	40	64.1	190	90	40
STATE STREET						
Santa Ana to Firestone	12,300	35	60.6	110	51	24
Firestone to Tweedy	15,500	35	61.6	127	59	27
CALIFORNIA AVENUE						
Santa Ana to Firestone	11,300	35	60.2	108	48	22
Firestone to Tweedy	11,400	35	60.2	104	48	22
Tweedy to Century	11,200	35	60.2	103	48	22
OTIS STREET						
Santa Ana to Firestone	12,400	35	60.6	110	51	24
Firestone to Southern	4,100	35	55.8	52	24	11
Southern to Tweedy	6,200	35	57.6	70	32	15
Tweedy to Century	3,700	35	55.3	49	23	11
ALEXANDER AVENUE						
Firestone to Southern	3,100	35	54.6	44	20	9
Southern to Tweedy	4,600	35	56.3	57	26	12
Tweedy to Century	2,000	35	52.7	33	15	7
ATLANTIC AVENUE						
Firestone to Southern	18,400	40	63.7	178	82	38
Southern to Tweedy	17,300	40	63.5	170	79	37
Tweedy to Wright	24,000	40	64.9	212	98	46
Wright to Imperial	14,600	40	62.7	152	71	33
GARFIELD AVENUE						
North City Limit to Firestone	21,110	40	64.3	194	92	42
Firestone to Southern	23,000	40	64.7	206	96	44
Southern to Imperial	18,800	40	63.8	180	84	39
Imperial to Gardendale	13,000	40	62.2	141	65	30
Gardendale to Century	15,400	40	63.0	158	73	34
PARAMOUNT BOULEVARD						
Gardendale to Century	16,400	40	63.2	164	76	35
GARDENDALE STREET						
Garfield to Center	7,800	35	58.6	81	37	17
RAYO AVENUE						
Atlantic to Firestone	8,300	35	58.9	84	39	18

Table A3 (Part 2)
CNEL NOISE LEVELS
FOR FUTURE TRAFFIC CONDITIONS

ROADWAY SEGMENT	TRAFFIC VOLUME	VEHICLE SPEED (MPH)	CNEL AT 100 FEET	DISTANCE TO CNEL CONTOUR FROM ROADWAY CENTERLINE (FT)		
				60 CNEL	65 CNEL	70 CNEL
SANTA ANA STREET						
Long Beach to California	8,200	35	58.8	83	39	18
California to San Juan	8,200	35	58.8	83	39	18
San Juan to Otis	7,200	35	58.2	76	35	16
FIRESTONE BOULEVARD						
West City Limit to Long Beach	25,400	40	65.1	220	102	47
Long Beach to California	28,900	40	65.7	240	111	52
California to Otis	28,900	40	65.7	240	111	52
Otis to Alexander	28,700	40	65.6	240	111	52
Alexander to Atlantic	25,000	40	65.1	218	101	47
Atlantic to Rayo	33,500	40	66.3	265	123	57
Rayo to Long Beach Fwy.	48,300	40	67.9	338	157	73
Long Beach Fwy to Garfield	51,400	40	68.2	352	163	76
Garfield to East City Limit	38,300	40	66.9	289	134	62
SOUTHERN AVENUE						
West City Limit to Santa Fe	3,100	35	54.5	44	20	9
Santa Fe to Long Beach	8,900	35	59.2	88	41	19
Long Beach to California	10,400	35	59.8	98	46	21
California to San Juan	8,300	35	58.9	84	39	18
San Juan to Otis	4,100	35	55.8	52	24	11
Otis to Alexander	9,400	35	59.4	91	42	20
Alexander to Atlantic	4,100	35	55.8	53	24	11
Garfield to East City Limit	12,700	35	60.7	112	52	24
TWEEDY BOULEVARD						
West City Limit to Truba	5,100	35	56.7	61	28	13
Truba to Santa Fe	6,400	35	57.7	71	33	15
Santa Fe to Long Beach	8,200	35	58.8	83	39	18
Long Beach to State	12,400	35	60.6	110	51	24
State to California	15,400	35	61.5	127	59	27
California to San Juan	18,500	35	62.3	143	67	31
San Juan to Otis	20,500	35	62.8	153	71	33
Otis to Alexander	18,300	35	62.3	140	66	31
Alexander to Hildreth	16,300	35	61.8	132	61	28
Hildreth to Atlantic	12,200	35	60.5	109	50	23
CENTURY BOULEVARD						
Santa Fe to Long Beach	11,100	40	61.5	127	59	27
IMPERIAL HIGHWAY						
Bullis to Long Beach Fwy.	32,800	40	66.2	260	121	56
Long Beach Fwy to Garfield	50,600	40	68.1	348	162	75
Garfield Pl. to Garfield Ave.	34,500	40	66.5	270	125	58
Garfield to East City Limit	35,400	40	66.6	275	127	59
LONG BEACH FREEWAY						
Firestone to Imperial	148,300	55	78.2	1644	763	354
CENTURY FREEWAY						
	147,200	55	78.2	1636	759	352

GLOSSARY

A-WEIGHTED SOUND LEVEL. The sound pressure level in decibels as measured on a sound level meter using the A-Weighted filter network. The A-Weighting filter deemphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgement of loudness.

AMBIENT NOISE LEVEL. The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

COMMUNITY NOISE EQUIVALENT LEVEL (CNEL). The average equivalent A-Weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7 p.m. to 10 p.m. and after addition of ten (10) decibels to sound levels in the night before 7 a.m. and after 10 p.m.

DAY-NIGHT AVERAGE LEVEL (LDN). The average equivalent A-Weighted sound level during a 24-hour day, obtained after addition of ten (10) decibels to sound levels in the night before 7 a.m. and after 10 p.m.

DECIBEL (dB). A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dBA. A-weighted sound level (see definition above)

EQUIVALENT SOUND LEVEL (LEQ). The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level. The energy average noise level during the sample period.

FREQUENCY. The number of times per second that a sound pressure signal oscillates about

the prevailing atmosphere pressure. The unit of frequency is the hertz. The abbreviation is Hz.

INTRUSIVE NOISE. That noise which intrudes over and above the ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence, and tonal or informational content as well as the prevailing ambient noise level.

L10. The A-Weighted sound level exceeded 10 percent of the sample time. Similarly L50, L90, L99, etc.

NOISE. Any unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

NOISE ATTENUATION. The ability of a material, substance, or medium to reduce the noise level from one place to another or between one room and another. Noise attenuation is specified in decibels.

NOISE EXPOSURE CONTOURS. Lines drawn around a noise source indicating constant or equal level of noise exposure. CNEL and Ldn are typical metrics used.

NOISE REFERRAL ZONES. Such zones are defined as the area within the contour defining a CNEL level of 60 decibels. It is the level at which either State or Federal laws and standards related to land use become important and , in some cases, preempt local laws and regulations. Any proposed noise sensitive development which may be impacted by a total noise environment of 60 dB CNEL or more should be evaluated on a project specific basis.

NOISE SENSITIVE LAND USE. Those specific land uses which have associated indoor and/or outdoor human activities that may be subject to stress and/or significant interference from noise produced by community sound sources. Such human activity typically occurs daily for continuous periods of 24 hours or is of such a nature that noise is significantly disruptive to

activities that occur for short periods. Specifically, noise sensitive land uses include: residences of all types, hospitals, rest homes, convalescent hospitals places of worship and schools.

SOUND LEVEL (NOISE LEVEL). The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

SOUND LEVEL METER. An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

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